MT9750 V5.0

(MS Windows 95, MS Windows NT)
9750 Emulation under Windows
Product Manual

Edition February 1998

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Continued ▶

1 Preface

This product manual describes the MT9750 V5.0 emulation program from Siemens Nixdorf Informationssysteme AG (SNI). This chapter deals with the following subjects:

– The basic functions of MT9750 and improvements to the preceding version

– Guidelines on the use of this manual

– Overview of the individual chapters

– The notational conventions used in this manual

1.1 Brief description of the product MT9750

MT9750 V5.0 is a terminal emulation program that can be used under MS® Windows® NT 4.0 and MS Windows 95 as a true 32-bit application. MT9750 emulates the functions of a data display terminal on your PC (in the BS2000® environment, terminals are called data display terminals). With the exception of only slight differences, it simulates the functions of a 9763 data display terminal and when configured appropriately it can emulate another terminal from the 9750 product family. The appearance can be adapted to suit your individual requirements regardless of the functions emulated. The term 9750 is used in this manual as a generic term for data display terminals of type 9750, 9755, 9756, 9758, and 9763.

9750 data display terminals are connected to Siemens Nixdorf mainframes running the BS2000 operating system (BS2000 hosts). Using the emulation program, you can enter commands at your PC that are interpreted by the BS2000 host. In this way, your PC replaces a data display terminal and also offers the diverse options associated with the modern PC world.

1.2 Target group

This manual is intended for PC users who want to use the product MT9750 to communicate with applications on a BS2000 host.

For a better understanding of this manual you should be experienced in using a PC and know how a PC network operates. You also need to know how to use the Windows interface as well as the relevant BS2000 applications. If you have already worked with the functions of an actual DSS9750 data display terminal, you will soon become familiar with MT9750.

If the emulation program MT9750 has already been configured for you, a knowledge of Windows and the basic BS2000 commands is sufficient to understand the operating instructions for the emulation program.

The BS2000 environment (PDN, printers) must be configured by the BS2000 system administrator on the host or the communication computer (CC).

1.3 Summary of contents

This manual is divided into four parts that deal with various subjects relating to each respective task.

In “Getting to know the product”, the functions of MT9750 are presented after an introduction to the terminology. In addition to the connection options, the 9750 functions supported and the additional functions are described. Experienced PC users are provided with an overview of the programming boards supported by MT9750 for customizing and connecting to other PC applications.

The overview is followed by the part entitled “Preparing/configuring the product” which describes the actions that must be performed before the program can be used, i.e. installation and configuration of the emulation. Information on generating the host is required for setting up a connection correctly via the communication method to be used.

“Using the emulation” describes working with the emulation in the individual sessions as well as how to use the additional emulation utilities efficiently. It also contains information on problem diagnosis.

“Looking up information” contains information that is generally only required in special cases.

The “Glossary”, “Abbreviations“ “Related publications”, and “Index“ chapters are provided as a source of reference and are intended to help you as you work through the manual.

Unless otherwise stated, MT9750 stands for version V5.0 of the MT9750 program in this manual.

1.4 Changes since the last version of this manual

The following section describes the new functions in MT9750 V5.0 compared with V4.1.

- MT9750 V5.0 now runs under Windows 95 as well as under Windows NT 4.0 as a 32-bit application.
- A new, user-friendly installation program supports you in configuring the program on your PC.
- Communication options:
  - LAN connections via the Windows NT 4.0 or Windows 95 TCP/IP protocol stacks
  - ISDN connection
  - Telecommunications via the MODACOM mobile radio data network
  - Telecommunications based on the GSM mobile telephone network (D1/D2)
- A user-friendly menu interface based on Windows 95.
- Customization of keyboard mapping using a keyboard mapping program
- Operating sequences are automated using the macro recorder, which records user input, and editable macro files.
- Other Windows applications can be started using macro keys.
- Additional option for using programmable keys by adding user-defined P keys - which are not overwritten by host applications - to the P keys concept.
- A displayable window containing a user-defined selection of function keys (hotspots) makes it easier to use the mouse.

- Print options:
  - Bypass printing in local area networks (LANs)
  - Choice between transparent print output and conversion with GDI print
  - Full-page hardcopy without cursor positioning
  - Bypass printing can be configured for transparent printing
  - Individual print filters can be connected
- Extended options for exchanging data with other applications:
  - via the DDE interface
  - via a DDE API
  - via the EHLLAPI interface
  - via the Entire Connection interface
  - OLE automation
- Compatibility with other SNI products for PC integration in BS2000 networks (openFT, VFT, FHS-DOORS).
- Additional country-specific variants and keyboards supported (e.g. Czech and Greek language variants, trimodal keyboards, switching to alternative character set in Cyrillic Windows).
- XHCS/EHCS support.
- Extended diagnostic facilities for troubleshooting.
- The MTKonv conversion program allows you to continue to use existing connection and session configurations under MT9750 V5.0. It provides a simple and user-friendly method of migrating from preceding versions.

1.5 Notational conventions

The following notational conventions are used in this manual:

italics	Names of files, programs, commands, variables, options and screen dumps such as input fields, text fields, menus etc. in the main body of the text
bold	Syntax representations: constants
`typewriter text`	System output such as error messages, messages, notes, file excerpts
`bold typewriter text`	User input in examples
“quotes”	References to other chapters or manuals
	Keys or key combinations in the main body of the text
►	User actions
	Additional information, notes, and tips
	Warnings that must be observed

Getting to know the product

2 General information on MT9750

This chapter introduces you to the fundamental concepts and terminology of MT9750 emulation. It is intended for users with little or no previous knowledge and can be read selectively.

You may want to skip this section if you have already worked with the preceding version or similar products and are familiar with the terminology.

2.1 Terminal emulation

Host applications are generally operated at so-called terminals. The type of terminal depends on the host at which you are working; a BS2000 host terminal is called a data display terminal for example.

A terminal emulation is a program that emulates the properties of a terminal on another system. This means you can send data from this system (which would not be suited to this without the emulation) to the host or receive data from the host and access applications installed on a host. MT9750 is a terminal emulation that emulates the properties of a data display terminal on a PC. Using MT9750, the users of a PC with Intel® processors 80486™ or higher (or processors compatible with these) can communicate with one or more BS2000 hosts.

MT9750 allows the connection of PCs in TCP/IP-based networks to BS2000 hosts. In this way, the range of functions of the host applications running centrally are available in full to the PC user running MT9750.

2.2 Session

A session is the logical connection of two programs for the purposes of exchanging data. Session in this case refers to a connection between the MT9750 emulation and a BS2000 application. The MT9750 session runs in a window in Windows format. The data from the BS2000 host and keyboard input is displayed in the window work area; this is the presentation area of the host.

Each session is allocated parameters which are saved under the session name when the session is saved. These parameters relate to the connection configuration and also the configuration of the session display attributes (e.g. the size of the characters displayed in the work area).

The session attributes are saved locally on your PC in a session file with the filename extension *.MTS*. In addition, the assignment of programmable keys is allocated to each session and is saved in a second file (with the filename extension *.MTK*).

There are three special types of session and these are described below:

2.2.1 Temporary session

A **temporary session** is a session whose parameters are not saved, i.e. it is only made available once. The connection is only required temporarily, so a permanent definition using a connection name is not recommended. In certain cases, temporary sessions are suitable for guaranteeing reserved access control as the user must be informed of the required connection parameters.

2.2.2 Passive session

Passive sessions allow connections to be established from the host. These sessions are generally needed if you want to use the bypass print function. In bypass printing, the connection is established from the host; the remote station - your PC in this case - must have the mechanisms to detect that an attempt is being made to establish a connection and react to this attempt. Passive sessions can also be used for printing for other applications that establish the connection from the host.

A passive session is configured in the same way as an active session - the only difference being that the *Mode* option under the extended settings must be changed to *passive* from the default.

2.2.3 Multiple session

MT9750 allows you to run communication connections with a number of applications simultaneously. These connections can also exist with different hosts, in which case they are referred to as multiple sessions. Each communication connection is allocated a window. The windows are arranged in accordance with Windows conventions. Keyboard entry is only possible in the session with the focus; automatic data exchange (e.g. via DDE) can also be carried out in the background. Each window behaves like a separate 9750 data display terminal.

MT9750 can support up to 16 sessions simultaneously. Restrictions may be imposed by the storage capacity of your PC and the memory required by other memory-resident programs that are also active at the same time as MT9750.

2.3 Programmable keys (P keys)

With MT9750, you can assign long or frequently used keyboard input to function keys. These keys are then referred to as "Programmable keys (P keys)". Pressing a programmable key has the same effect as inputting the corresponding characters and keys directly using the keyboard. Using the P keys, you can save commands that have to be entered repeatedly in the same form and call them any number of times.

A maximum of 20 P keys (P1 to P2) can be assigned under MT9750. The P keys are mapped to the PC keyboard function keys; thus, the key P1 is mapped to the function key F1 on the standard PC keyboard for example. You can also operate the programmable keys using a separate Function Keys window. This window is accessed under *Settings: Keyboard Mappings: Function Keys Window.*

If you are uncertain about the mapping of 9750 function keys (such as P keys) to your PC keyboard keys, you can check the mapping under *Settings: Keyboard Mappings: Keyboard Mappings* (see also "Keyboard mappings").

Programmable keys are defined session by session, i.e. they are valid for the session in which they were defined. There are two utilities available for assigning the P keys: one for recording programmable keys during input and one for editing programmable keys regardless of the data entry in the session window.

The programmable keys' assignment can also be changed by the host application (e.g. by the PLUS program).

2.3.1 User-specific P keys

In addition to the P keys with which you may be familiar from the original device, MT9750 contains another memory area for storing P key assignments which cannot be overwritten by host applications. It is thus possible to work with host applications that modify the P key assignments, and at the same time go back to the individual key mapping.

The user-specific P keys are mapped in the same way as the normal P keys using the P key editor, but in this case as the "Px' key.

2.4 Keyboard mappings

As there is no direct equivalence on a standard PC keyboard for all 9750 keys, some 9750 keys have to be mapped to PC keys. If, for example, you are working with a country-specific PC keyboard, MT9750 maps the DÜ1 key on the 9750 data display terminal keyboard to the ↵ input key on your keyboard.

You can call the list of keyboard mappings using the *Keyboard Mappings* menu item in the *Settings* menu. The keyboard mappings are set by MT9750 and depend on the type of keyboard connected to your PC. You can use this list to check the PC key (combinations) to which a particular 9750 key is mapped while working with the emulation program.

3 The MT9750 functions

MT9750 has functions that go beyond the simple emulation of a DSS9750/63 data display terminal. The connection methods supported, the emulation functions that conform to those of the 9750, and the additional functions are listed below.

3.1 Connection methods supported

MT9750 can be connected to the host system using all communication connections supported by the Windows (95 or NT) TCP/IP interface. These are, for example:

1. In a LAN: TCP/IP connections
2. In a WAN: Connection via a mobile radio telephone service (MODACOM, D1/D2 networks), ISDN, etc. To do this you also need the appropriate protocol conversion product.

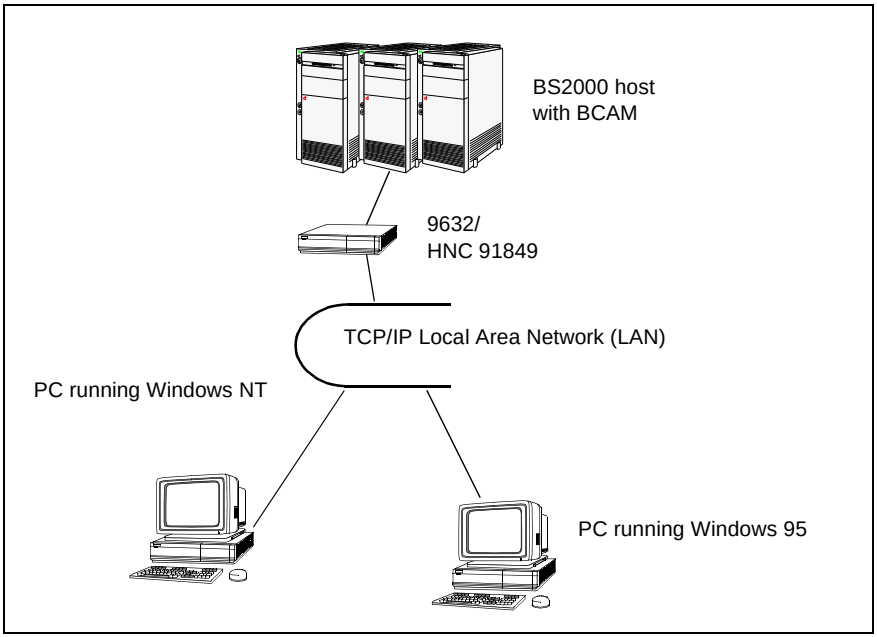
An overview of the typical connection options is shown over the following pages.

LAN

The following connections can be implemented using LAN/CX:
– TCP/IP connections
– Mobile connections via mobile radio networks (MODACOM and D1/D2)
– ISDN connections

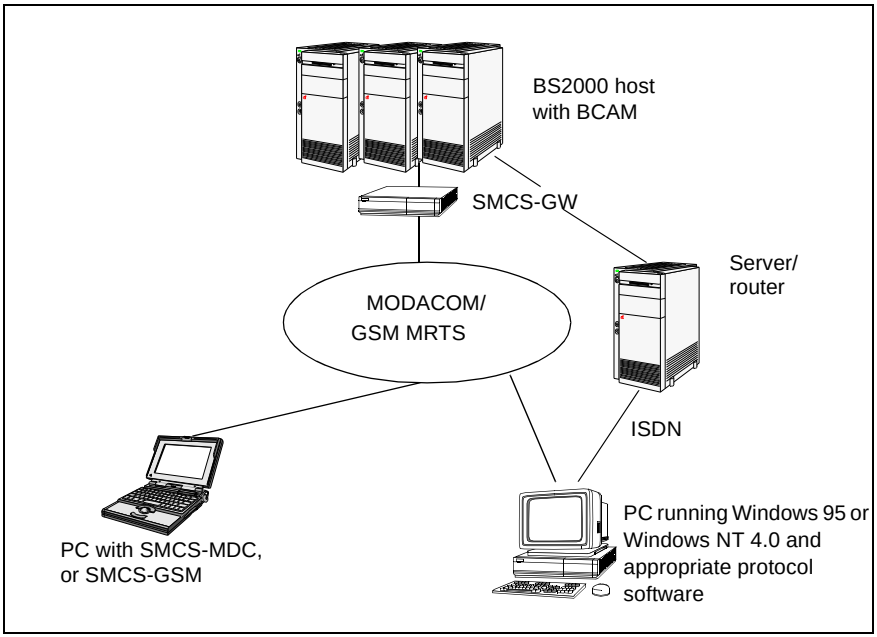
If you want to connect your PC to the BS2000 host via a TCP/IP LAN, the Windows TCP/IP network protocol must be installed and configured. In addition, you will need a communication board to connect your PC to the LAN as well as a cable to connect your PC to the LAN.

The following diagram provides you with a typical overview of the type of connection options in the TCP/IP LAN:



LAN connection options

Contact your local Siemens Nixdorf regional office if you require further information on this software as well as the cables and interface boards required.



WAN connection options

The diagram above shows only a selection of the possible connections along with the components required. If in doubt, refer to the documentation for the respective product for information on other connection options available.

Contact your local Siemens Nixdorf office for more information.

3.2 Original device functions supported

The functions supported by the 9750/63 data display terminal listed in the following section are emulated by the MT9750:

- Unformatted and formatted mode
- Color display and configuration
- Programmable keys
- Support for the 9750 function keys
- Character generation
- Support for 8-bit character sets
- Configuration options for decimal characters, the cursor, and deleted display space
- Printing of host files to local printers (bypass printing)
- Screen dump output to local printers (hardcopy)
- Support for the following structured statements:
  status message, status check, read P areas, define screen, reset screen, and error messages
- Support of extended attribute definitions

3.3 Additional functions

In addition to emulating the functions of a data display terminal, MT9750 offers further functions:

- Executable under MS Windows 95 and Windows NT 4.0 as a true 32-bit application
- It can be operated with menus and dialog boxes
- It offers user support by means of online help
- Characters can be resized automatically to suit the window size or can be configured manually
- Sessions can be recorded for error diagnosis
- Multiple sessions
- Screen data can be copied and pasted to or from a file or to or from the Windows clipboard, and data can be transferred to a printer
- Screen data can be copied and pasted via the Windows clipboard
- Screen data can be copied via DDE (Dynamic Data Exchange)
- Automated data exchange with other applications via various programming interfaces (DDE, EHLLAPI, Entire Connection, OLE automation)
- Communication via a LAN (Local Area Network)
- User-defined P keys and macro keys
- Windows to display the keyboard mappings with the option of starting functions using the mouse
- Windows containing an individual selection of frequently required functions, including user-specific P keys and macro keys
- PC and trimodal keyboards are supported
- A function for switching to an alternative character set in Cyrillic Windows
- An option for customizing the keyboard assignment to your individual requirements
- Integrated macro recorder for automating functions
- File transfer for exchanging data between PC and BS2000 host: either using the VFT product supplied or using openFT
- Conversion of existing session configurations from preceding versions
- Printing to PC printers that cannot be configured in the TRANSDATA network
- Printing the full screen contents regardless of the cursor position

3.4 MT9750 print functions

MT9750 emulates the bypass and hardcopy print functions of the 9750. You can also use the Windows *Copy* function which copies the contents selected in the session window to the local printer. Further on in this section you will find more information in this regard.

3.4.1 Bypass print

Bypass printing denotes the output of host data to a printer connected to a data display terminal. The BS2000 Remote Spool Output (RSO) spool system is generally used to do this. The data is output to the printer connected to the data display terminal without being displayed on the screen. When bypass printing with the emulation, you have the option of buffering the print data in one or more files.

3.4.2 Hardcopy print

Hardcopy refers to the printout of the current session window. The hardcopy size (number of rows and columns) is not based on the size of the current session screen visible, but the actual number of rows and columns in the session as well as the position of the cursor.

You have the option of printing the output to a local printer connected to a PC or to a file.

Hardcopies can be initiated in one of two ways:
– Manually, by pressing a hardcopy key or the mouse
– Program-controlled, by entering a corresponding key sequence

The programmed hardcopy is initiated by the BS2000 host. The message transferred is displayed on the data display terminal and once transfer is complete, the print job is started or it is rerouted to a file. Keyboard input is not possible until print output is complete.

With manual printing, the print job is initiated by a [LAx] key. Here the keyboard also remains locked until print output is complete.

3.4.2.1 Full-page hardcopy

Hardcopy printouts output the screen contents from the current cursor position onwards to the printer. MT9750 offers you the option of printing the full screen contents or of outputting it to a file, regardless of the cursor position. This form of hardcopy is not initiated using a LAx key, but by selecting the *Print Screen* menu item in the *Session* menu or by clicking on the toolbar button.

3.4.2.2 Copying to the printer

The option of copying screen data to a printer is an extension of the 9750 data display terminal print options.

Data within the session window is referred to as screen data. You can select either all or part of the screen and then copy it to the local printer using the *Edit: Select All* or *Edit: Mark* menu items. Data that is visible and printable is copied, while invisible or non-printing data is displayed in the form of blanks. You can also copy to a file or the clipboard.

3.5 Macro recorder

In order to automate constantly recurring functions (such as starting host applications using certain options) quickly and easily, an option has been implemented for recording user input, for editing using a simple programming language (queries, loops), and for playing back user input as required. This function is available by selecting the macro recorder.

3.6 MT9750 programming interfaces

MT9750 supports various programming boards that allow host data to be accessed via separate application programs:

– Dynamic Data Exchange (DDE) interface
– Emulator High Level Language Application Programming Interface (EHLLAPI)
– Entire Connection
– OLE Automation

You can also integrate printer filters that allow the print data stream to be edited or changed in line with your requirements.

For more information, particularly in relation to the functions supported and their syntax, please refer to the MT9750 Programmer Reference Guide, the full details of which can be found in the “Related publications” chapter.

Preparing/configuring the product

4 Hardware and software requirements

This section describes the hardware and software components required to operate the MT9750 emulation program .

4.1 PC

The requirements for using MT9750 depend primarily on the operating system used. The minimum requirements for use are an 80486SX/DX or Pentium® processor and 8 Mbytes of main memory, these values increase considerably for use under Windows NT. In addition, the memory requirements of other Windows applications which will be used must be taken into consideration. It is therefore essential when planning hardware that you take account of the operating system specifications in particular.

The amount of free memory required on your hard disk depends on the components to be installed, but approximately 4 Mbytes should generally be sufficient. A CD-ROM drive is required if you are installing the full product or the admin program (no client installation). The online documentation supplied is also on CD-ROM and is read from there as required.

A VGA® monitor is required for MT9750. We recommend a resolution of at least 800x600 pixels and that it be configured with 32k colors.

MT9750 supports country-specific standard PC keyboards, as well as trimodal keyboards.

You need Microsoft Windows 95 or MS Windows NT to run MT9750 V5.0. It cannot be installed under 16-bit operating systems.

In addition, a suitable communication board (also called an interface board in the following chapters) must be installed and configured in your PC for data communication in the LAN. If you have questions on this subject, contact the manufacturer or vendor of the communication board.

4.1.1 Connecting peripherals

You can use the printer configured under Windows from MT9750 to create your hardcopies or bypass printouts. You can also connect various trimodal keyboards that have special BS2000 function keys and therefore simplify working with the product.

4.2 Host software requirements

Ensure that the following software is installed on the BS2000 host:

BS2000 V9.5 or later and TCP/IP (BS2000) V2.1A or later. BCAM V.11 or later must be running on the BS2000 host for bypass printing via a LAN.

If you want to use 8-bit character sets, an additional program (EHCS or XHCS) must be installed on the BS2000 computer.

5 Installation

This chapter describes the installation of the MT9750 software. It is divided into the following sections:

The individual installation steps
This section explains the correct sequence for the installation process.

Installing the PC software
This section explains how to install the software on your PC.

Reinstalling components
The section explains the procedure for installing components at a later date.

Updating PC software
This section explains how to update a version of MT9750 (V5.0 or later) to a later version.

Deinstalling MT9750
This section explains how to remove MT9750 from your system.

5.1 The individual installation steps

When installing the MT9750 emulation, various components (BS2000 host, data transfer facilities, interface boards, emulation software) are connected logically. You should note the sequence for installing the emulation described in the following section to ensure smooth operation of MT9750.

– First establish whether your PC can connect to the BS2000 system via a LAN connection. The host system administrator will be able to give you the relevant information. You can also ask him what preparations he should carry out for you on the host (this depends on the applications you want to use).

– Ensure that you have a TCP/IP connection to the host (e.g. using the `ping <host-ip>` command).

– Once you have set up the hardware required for operating MT9750, you can start installing and configuring the software on your PC.

5.1.1 Selecting the language for the installation and user dialogs

Once the setup program is started, a dialog box is displayed in which you can select whether the setup program should be started in German or English. This selection only defines the language of the distribution program and the language which is displayed for the manuals. The language for the installation of MT9750 is selected at the beginning of the installation program (after calling up “Installation“).The language you specify also affects the user interface of the installed program, from the start-up menu entries to the emulation interface.

5.2 Installing the PC software

MT9750 V5.0 is shipped with a user-friendly installation program that can perform a number of tasks for you:

- Prepare a server for the network installation
- Individual installation with various installation options
- Reinstall components
- Update a predecessor version (the predecessor version must be V5.0 or later)
- Deinstall the software

5.2.1 The administration program for preparing the server

The administration program helps the server administrator to prepare for distribution of the program on the target systems. You can prepare a server for the distributed installation and also generate diskettes (or images) for the local installation of the program.

With server preparation, all of the MT9750 files, including an executable SETUP program, are stored on the server in a resource. The SETUP program is called later from the client and performs the installation as required by the user at the PC. During the installation process, the user can specify that only the configuration files are to be copied to the client and the program files are to be called on the server (the so-called distributed installation). The administrator can, in turn, store pre-prepared configuration files on the server.

5.2.2 The installation program

The options that you are offered when you call the MT9750 installation program depend on whether you already have a version of MT9750 V5.0 installed. If you do not, you have the following selection options:

– Minimum installation

– Standard installation

– User-defined installation

– Distributed installation

You are offered the last option only if you are installing from a prepared server.

Minimum installation

This option installs only the necessary MT9750 components. Further programs, for example VFT (Virtual File Transfer) are not installed. You can, however, install these at a later point in time.

Standard installation

This option installs the standard elements contained in MT9750 V5.0, i.e. the emulation, KBDMAP, and the conversion program for old configuration files.

User-defined installation

You should only perform a user-defined installation if you already know the program (e.g. from the preceding version). With this installation type you select the components to be installed from a list. All of the files that are required for a component are always copied.

Distributed installation

If you install the MT9750 V5.0 software from a prepared server, you can perform the installation in such a way that the program files remain on the server and your Windows start menu contains appropriate links after the installation. In this case, only the necessary configuration files are copied locally to your PC.

With distributed installation, you can also select the components to be installed from the list of available components, if required.

5.2.3 Reinstalling components

You can also use the installation program to add further components to an existing MT9750 installation. To do this, call the *SETUP.EXE* program from the installation medium once again. The program recognizes the existing installation and offers you options for reinstalling or updating MT9750. Click on *Add Component* to extend the installation and go to the component selection option. Then select the relevant component(s) and proceed as for the first-time installation.

Your software is automatically updated during a reinstallation which guarantees that the software modules installed remain consistent.

5.2.4 Updating PC software

MT9750 allows the automatic updating of program files. To do this, call the *SETUP* program from the installation medium and click on *Update*. The program components that are already installed are recognised and, if necessary, replaced by the current versions. This does not overwrite existing configuration files.

A current version is not updated, instead you are informed that you already have the current version installed.

When you reinstall or update your software, the language selected in the first-time installation is retained regardless of the language selected in the installation dialog.

5.3 Guidelines on the individual connection types

The following section contains guidelines that should be observed with regard to the individual connection types or references to related documentation.

5.3.1 Connecting via TCP/IP LANs

MT9750 supports the TCP/IP protocol stacks of the following products:

– LAN1 Pro V5.0
– Windows 95
– Windows NT 4.0

You can connect your PC to a local network with one of these products. Information on how to install these products on your PC can be found in the LAN1 software from Siemens Nixdorf or in the Windows documentation from Microsoft.

Mapping names to IP addresses

To address the host using symbolic names, the TCP/IP host names must either be mapped to host IP addresses in the file *lmhosts* (e.g. <Windows directory>:*\System32\drivers\etc\lmhosts*) or (generally) on a name server. This depends on the configuration of your network. You can however also access the host directly via the corresponding IP addresses. In this case you do not need an *lmhosts* file.

Connecting via a WAN using ISDN-Connect

In addition to the integration of PCs in a LAN, there is an increasing need to connect individual PCs beyond the scope of the local network. Typical examples of this are the networking of individual PCs in branch offices or laptops for field workers. ISDN-Connect (included in LAN1 from Version 3.0B on) allows MT9750 to communicate with BS2000 via wide area networks (WAN). The following transmission variations are offered:

– TCP/IP via ISDN
– TCP/IP via DATEX-P (X.25)
– TCP/IP via GSM (D-Network)

You can find further information on software and hardware requirements in the relevant product documentation.

5.3.2 Connecting via the MODACOM mobile radio data network

Connections to the German Telekom® MODACOM mobile radio data network can be implemented via TCP/IP. To do this, you need the SMCS-MDC product from Siemens AG and a suitable modem.

From the point of view of the emulation, this type of configuration is completely transparent, i.e. the necessary steps for configuration are carried out in the underlying products.

5.3.3 Connecting via the GSM mobile telephone network

Connections to the GSM mobile telephone network (D1/D2 or E-plus) can be implemented via TCP/IP. To do this, you need the SMCS-GSM product from Siemens AG and a suitable modem.

From the point of view of the emulation, this type of configuration is completely transparent, i.e. the necessary steps for configuration are carried out in the underlying products.

5.4 Installing printers

The procedure for installing printers connected directly to the host is not described in this manual. To find information on this, read the relevant printer or host manual.

Local printer

You can use a Windows printer connected to your PC from MT9750 for printing host files.

A Windows printer can only be connected to a port supported by Windows (LPT1, LPT2, LPT3, COM1, COM2, COM3, COM4). Further information on this can be found in the Microsoft Windows User Guide.

Information on configuring local printers under MT9750 can be found in the section "Configuring the printer" in the "Configuration" chapter.

5.5 Deinstalling MT9750

Proceed as follows to delete the MT9750 software from your system and undo the entries in the Windows registry:

- Double-click on the *Software* icon in the Control Panel. You can access the Control Panel window under *Start: Settings: Control Panel*.
- The *Add/Remove Programs* dialog box lists the software installed on your system. Depending on the installed components, it also contains the MT9750 entries: *Siemens Nixdorf MT9750 V5.0*, *Siemens Nixdorf KBDMAP*, *Siemens Nixdorf VFT32*.
- Select the components that you want to remove from your system and confirm your selection by pressing the *Add/Remove ...* button. A dialog box for selecting the delete dialog language is displayed.
- Confirm your preferred language with *OK*. A dialog box containing information on the software components selected for deletion is displayed. You can still cancel deletion of the software by pressing the *Cancel* button.
- If you are sure that you want to delete the displayed components, confirm the dialog box with *OK* and the software and the registry entries are removed from your system.
- Repeat this procedure for each component to be deleted.

6 Configuration

Once you have installed MT9750 you can configure the emulation for use. This chapter describes how to configure and customize sessions in MT9750.

6.1 Preparatory steps

If MT9750 was already configured for you, continue with the chapter "Working in emulation sessions" which describes the operation of the configured emulation program.

The following preparatory steps must be carried out before calling MT9750 for the first time:

- Ensure that the TRANSDATA network is already configured for MT9750. If in doubt, consult your system administrator.
- Make sure that the TCP/IP software that you want to use is installed and correctly configured.
- Install MT9750 (see the chapter "Installation").

You can now start MT9750 via the entry in the start menu under *Programs: MT9750 32 bit: MT9750*. However you must configure a session before you can connect to a BS2000 host.

6.2 MT9750 session

A session is a window in the emulation where the host data is displayed. It may have a title and is saved under a filename. Each session is allocated parameters that determine its attributes, the assignment of programmable keys, and the connection. The parameters are set for each session individually and are only valid for the respective session.

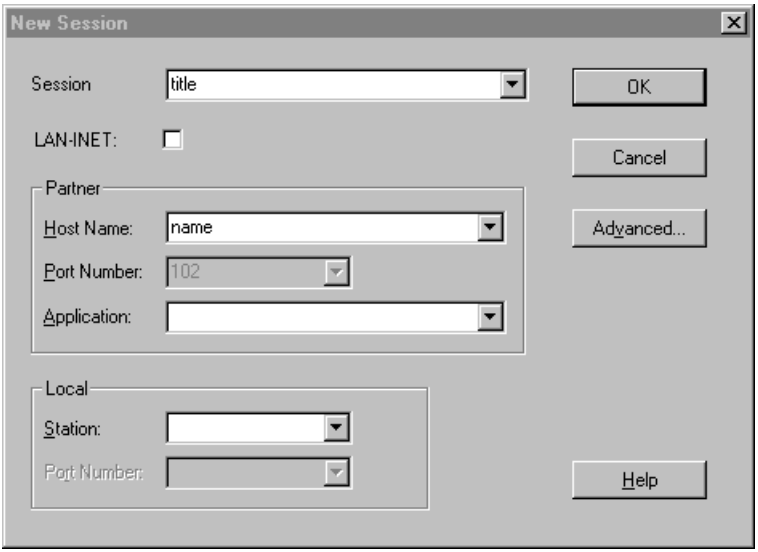
When configuring your sessions, you can set the various parameters to your own requirements. If you communicate with various BS2000 hosts regularly, you can configure separate sessions for each of them. You then only have to re-open the session to establish the connection with a certain host.

You can also work with different character formats in the various host application (i.e. small format characters are better suited to spreadsheets than large format ones) or with different P key assignments.

You have to configure a session if you are calling MT9750 for the first time.

6.2.1 Configuring a session

► Select *New* in the *Session* menu. The following dialog box is displayed:



► Enter a title (optional) of not more than 40 characters for your session in the *Session* text box.

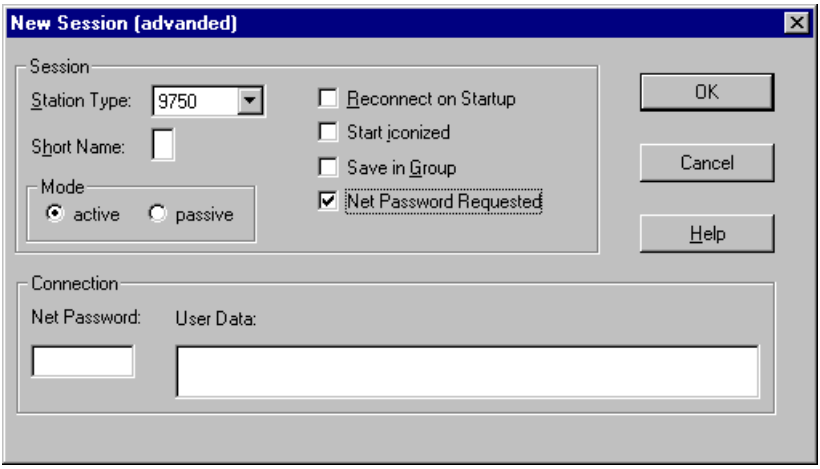
Sessions are configured in RFC1006 format by default. If you require LAN-INET connections that deviate from this, you can activate the check field. The manner in which you proceed differs from the RFC1006 default setting. In this case, read “Using the LAN-INET format“.

- In the *Partner* field, enter the *Host Name* as well as the host *Application* (optional) that you want to work with. As you can see, the default port for RFC1006 connections (102) is entered under *Port Number*. This cannot be changed. If you require another port, you must change to *LAN-INET* format.
- If your host application is expecting a specific station for establishing a connection, you can specify it under *Local: Station*; otherwise leave this field blank and the station is allocated dynamically.

These specifications are generally all that are required to define a session. You can therefore confirm your specifications with *OK* and the connection to the BS2000 host is opened.

Further advanced options are required for specific uses (e.g. passive sessions). You can specify these options if you click on the *Advanced* button in the dialog box for configuring a session.

Advanced options of the 9750 session



This dialog box allows you to specify the station type of your session, specify a short name, and modify the mode (active or passive session). The station type is needed by some host applications to check the characteristics of the terminal connected. However the parameters affect only the establishment of the connection and have no effect on the characteristics of your emulation session. The session short name (one character) is used by PC applications to exchange data with the corresponding session.

You can also specify other options for starting the emulation session:

– *Reconnect on Startup* means that the session is opened automatically when the emulation is started.

– Specify *Start iconized* if the session is to be started as an icon (e.g. for bypass printing in the case of passive sessions).

– *Save in Group* means that the session appears as a separate entry in the start menu in which you can start the session (and the emulation).

– The *Net Password Requested* option means that a dialog box for entering the password is displayed in networks where access is safeguarded using a network password. Alternatively you can specify the network password as well as a user message in the *Connection* field under *Advanced Options* at the session configuration stage. In this case the session uses the specified password.

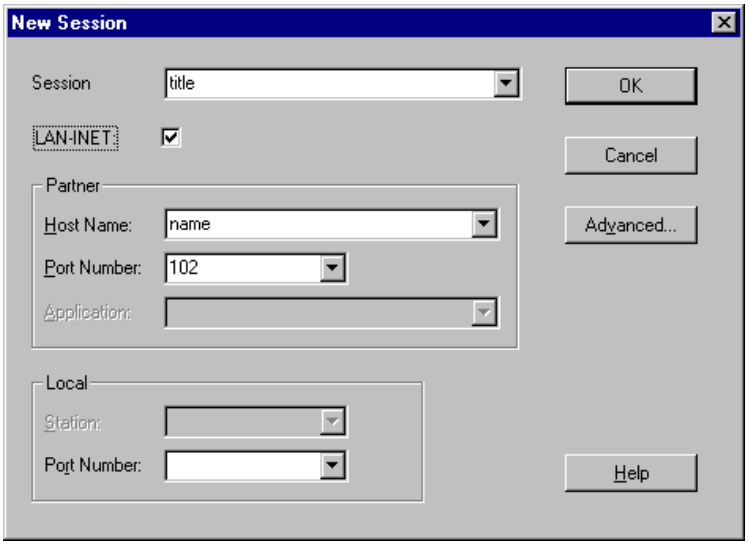
Note that you can only enter the password when you first configure a session. You cannot display or change it later.

Once you have entered all information relating to the emulation session, confirm it with *OK*.

With an active session, the session window with the BS2000 login prompt or the BS2000 application is now displayed on the screen. A passive session (see page 40) is started as an icon and waits for a connection to be established by the host.

Using the LAN-INET format

If you activate the LAN-INET option, the appearance of the dialog box changes somewhat: the fields under *Partner* and *Local* are assigned different input options.



As is the case with RFC1006 format, with active sessions you must also enter the name of the host with which you want to communicate. In place of the host application, under LAN-INET specify the port number that is generated in the host application. If in doubt about the host generation, ask your host administrator.

A port number is entered instead of the station under LAN-INET in the local configuration of the emulation session also. However this is not absolutely necessary in many applications and can remain blank. In this case, the emulation automatically allocates the session a free port. If your host application, on the other hand, is expecting a specific port (e.g. UTM applications or filetransfer), enter it under *Local: Port Number*.

The advanced settings in LAN-INET format are the same as in RFC1006 format; therefore for an explanation read the section “Advanced options of the 9750 session“ in this chapter.

6.2.1.1 Passive sessions

Passive sessions play a special role. In most cases they are needed to implemented bypass print connections. In contrast to active sessions, when configuring a passive session you specify the local station (or the local port number under LAN-INET) that is reserved for the passive session instead of a host name.

Configuring a passive session

- Select the *Advanced* button in the *Session: New* dialog box.
- Click on the *Mode: passive* option and confirm with *OK*.
- This returns you to the *Session: New* dialog box. Various specifications are required under *Local* depending on whether you require LAN-INET format: If you are working in the default format (RFC1006), specify the name of the local *Station*; otherwise (*LAN-INET* option active) the number of the local port that is intended for your passive session. In LAN-INET format, the *Port Number* to be used is generated in the host application that initiates establishment of the connection.
- Confirm the specifications with *OK*.

The passive session is started immediately as an icon; you do not have to configure this yourself.

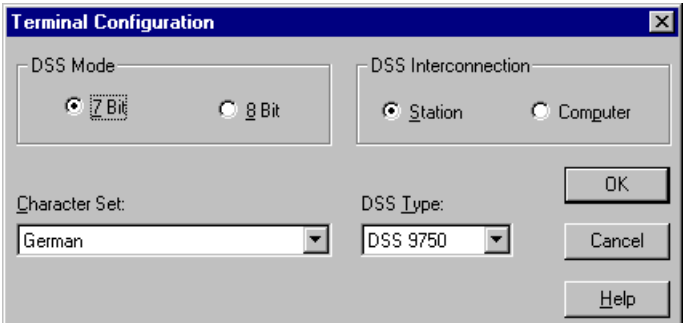
6.2.1.2 Saving a newly configured session

Once you have configured a session it is started. The relevant host application is started if the connection parameters are specified correctly. You must save this session if you want it to be available the next time you use MT9750. To do this, select *Save As* ... in the *Session:* menu and specify a name. The name must adhere to the naming conventions for Windows 95 or Windows NT, i.e. it can be longer than 8 characters in length. It must, however, have the filename extension *.MTS*. Once you have configured and saved a session in the manner described above, you can reopen it at any time.

Read the following section for information on how to adapt the session to your individual requirements.

6.2.2 Configuring the data display terminal

The following sections contain information on the data display terminal parameters that you may need to adjust. The parameters are found under *Configuration: Terminal Settings (DSS)...*. As the parameters are session-specific, you can only configure them if you have configured and opened a session.



- If you do not have a session open as described above, open one now.
- Select *Terminal Settings (DSS)...* in the *Configuration* menu.
- In the dialog box that appears, enter the *DSS Mode*, *DSS Interconnection*, *DSS Type,* and *Character Set* parameters.

DSS Mode:

DSS mode sets an operating mode locally that affects the character set to be used. If 7-bit *DSS mode* is set, a 7-bit character set that corresponds to the current country-specific variant is used. The following country-specific variants are supported:

– Danish
– German
– English
– French
– International
– Italian
– Swedish
– Spanish

If you are using 8-bit character mode, a total of 191 characters and symbols are available to you. The character set variants of the 8859-1, -2, -5, -7, and -9 ISO standard are supported in this mode.

DSS mode should always be matched with the respective host application.

If you want to work with 8-bit character sets, *EHCS* or *XHCS* must also be installed on the BS2000 host.

Character Set:

This specifies which national character set should be displayed on the screen in 7-bit mode (or 8-bit mode if you wish). Choose the character set here that is used by the host application.

DSS Interconnection:

If your computer is specified in the BS2000 generation as attached to a computer, you can expect mistakes in the character representation and you must change these parameters.

DSS Type:

Some host applications check the type of data display terminal connected. MT9750 sessions respond as 9750 data display terminals unless otherwise specified. If the host application is expecting a different type, you can change the MT9750 parameter so that the host application does not have to be adjusted.

6.2.2.1 Special terminal parameters

Certain events that occur while working with MT9750 are displayed and queried using messages. The related operator actions may disrupt the work in the emulation in certain circumstances. You have the option of disabling the following dialogs in the *Configuration: Special Parameters* ... dialog box:

– Dialog for modified session parameters

– Connection shutdown dialog (TCP/IP connections)

Click on the desired option to disable the corresponding message. In the case of modified session parameters, the changes are stored automatically.

The *Partner Characteristics* parameter only relates to passive sessions and is described in the next section.

6.2.3 Configuring passive sessions

Passive sessions are required in LAN connections to allow bypass printing. To do this, a session with a passive connection name is opened. This initializes itself as an icon and waits for a connection request from the host. Passive sessions can also be provided for dialog applications in which the connection is established by the host.

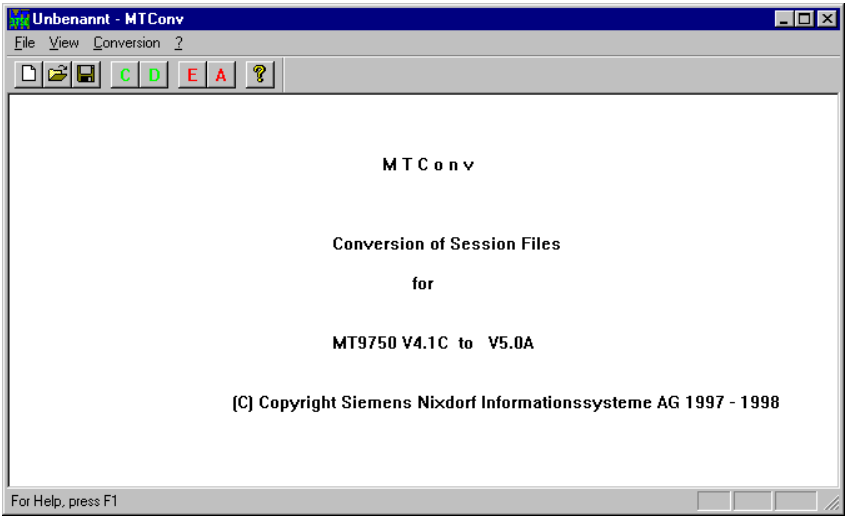
If the host application uses information about the attributes of the data display terminal (partner characteristics) to edit the (print) data stream, you also have to change the *Partner Characteristics* parameter to configure the printer (see below). These parameters can be found under *Configuration: Special Parameters: Terminal/Printer*. Click on the setting *long*. Generally, however, this parameter need not be changed.

6.3 Converting session files from a preceding version

If you already have a preceding version of MT9750 installed and want to retain the existing session configuration, you can use a program supplied for this very purpose that converts the data from the old configuration files (*CONNECT.INI, DIR1*, and MTS files) to the new format.

You call the conversion tool (*MTKonv*) from the MT9750 start group. You must reinstall the component if this entry is not available. For more information, see “Reinstalling components“.

Once you call the program, the following interface in which you enter the paths of the configuration to be converted is displayed.



Proceed as follows to convert the session files:

- First specify the files in which the old connection configuration is stored. To do this, change to the configuration directory of the preceding version under *Conversion: Select connect.ini* and select the *connect.ini* file used. Then specify the *DIR1* file used under *Conversion: Select DIR1*. For both menu items used, the icons labeled “C” and “D” are also available when the toolbar is enabled.

- ► Open the MTS file to be converted using the *File: Open* menu.
- ► Now start the conversion by selecting *Conversion: Generate single*. The session file to be converted is now transferred to the new format.
- ► Save the new session file in the MT9750 V5.0 configuration path. To do this, use the *File: Save As* ... menu.

If you want to continue to use a number of session files from your configuration, you can start the configuration process using *Conversion: Automatic* instead of *Conversion: Generate single*. In this case, all session files in the selected path are converted one after the other.

For single or automatic conversion, you can also use the symbols in the toolbar labeled “E” and “A” respectively.

Once you have converted and saved all the sessions, you can terminate the program and deinstall it if necessary. You can then access the converted configuration files under the new installation in the form of session files that you simply need to open.

6.4 Configuring the printer

This section describes how to configure MT9750 to print screen contents as well as host files. Information on printing can be found in the chapter “Printing“.

When configuring a printer, a distinction is made between adjusting to the print data stream that comes from the host (host printer) and the print data stream that goes to the connected printer (local printer).

6.4.1 Local printer

The local printer is a printer that is connected to your PC. MT9750 allows the connection of printers supported by Windows. The local printer configuration is global, i.e. it is not only valid for the current MT9750 session, but all MT9750 sessions.

Hardcopy printing (complete or screen shots) and bypass printing are performed on the local printer.

Points to remember when printing host files (bypass printing):
If you are using a Windows printer that is different from the one specified in the host generation, MT9750 converts the host data. To do this, MT9750 must know the format of the print data sent from the host. The conversion is configured by specifying the host printer. For more detailed information see the section “Host printer“.

6.4.2 Configuring a local printer

If you want to print to a default Windows printer that was already installed, you do not need to configure anything else. Proceed as follows to use a printer other than the installed Windows printer:

- Select *Local Printer...* in the *Configuration: Peripherals* menu.
- In the list of Windows printers displayed, highlight the required printer that is then defined as the default printer. You can also change the printer format (line length, page length, character size, etc.). To do this, select *Define Printer ...* and then *Print Format ...* You can call up more information in this dialog box using the *Help* button.

You can also use the Windows mechanism to configure your Windows printer. Information on the dialog box for configuring printers can be found in the Windows User Guide or in the reference manual accompanying the printer.

6.4.3 Host printer

The host printer is whatever printer is generated as the printer connected to the data display terminal in the BS2000 generation. The data that is sent from the host is in a format that can be understood by the host printer.

Transparent printing

If the formats of the host printer and local (Windows) printer match, you do not need to make any adjustments to the host printer type in the emulation. In this case, keep the *Printer Data from Host: Transparent* default in the *Configuration: Peripherals: Host Printer* menu. This method of handling print data is referred to as transparent printing.

Converting print data

If the formats of the host printer and the local (Windows) printer do not match, you can convert the print data to GDI format (setting: *Printer Data from Host: Non transparent)*. To do this, specify the *Printer Type* generated in the host under *Configuration: Peripherals: Host Printer.*

After its conversion, the print data is forwarded and output to the configured Windows printer.

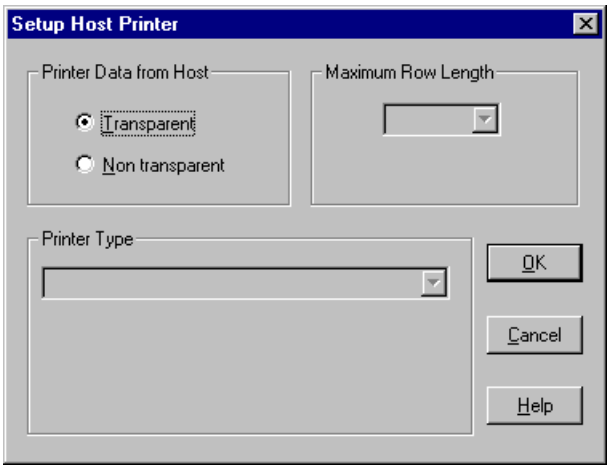
The following formats are supported:

– 9001 format
– 9011 format
– 9012 format
– 9013 format
– 9022-200 HP LaserJet format
– 9022-200 Diablo 630 format, and
– IBM Proprinter format

Other formats can be emulated using the Printer Definition Language (PDL). For information on how to do this, please refer to “The Printer Definition Language”.

Printer type in a passive session

For bypass printing, a separate session is required that is defined as passive and waits for a connection to be established by the host. When establishing a connection, the printer properties are checked by some host applications. In order to operate existing host applications as they are, an option was provided in MT9750 to configure the session in such a way that the expected session properties (in particular the printer type) are reported when the connection is being established. To do this, go to the *Configuration: Peripherals: Host Printer* menu.



► Enter the printer generated in the host under *Printer Type* and the row length that you would like for your printout under *Maximum Row Length*. This value can be used by the host application to print data.

i Unlike transparent printing (*Printer Data from Host: Transparent* option active), with the *Printer Data from Host: Non transparent* option, you can only specify printer types for which conversion into GDI format is supported (see the section "Converting print data").

The following table explains the effects of setting the print type in the various print modes relating to active/passive sessions as well as print output to WIndows printers:

	Print data conversion	**No print data conversion**
Active session	Conversion to corresponding GDI format	No effect
Passive session	Conversion to corresponding GDI format as well as identification to the host	Identification to the host

For passive sessions, the following special features of transparent printing also apply.

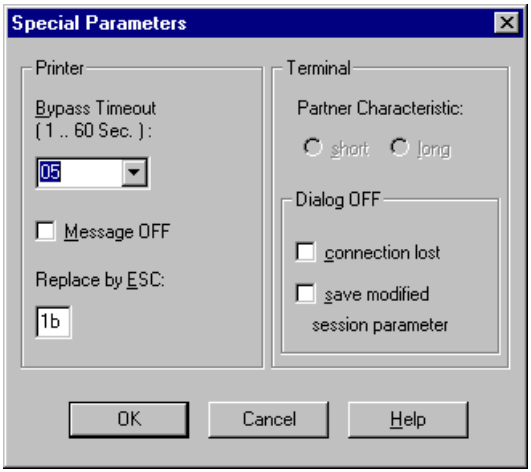
6.4.3.1 Special features of transparent printing

The default for bypass printing with MT9750 is transparent printing (*Printer Data from Host: Transparent* option).

This mode should – insofar as possible – be used as the print jobs are processed considerably quicker. In addition, this mode offers you the option of accessing the data stream using two mechanisms:

– Replacement characters for ESC
  Certain host applications do not use the default control character ESC (Escape) for the printer controller. In order to be able to continue to use these applications without needing adjustment, you have the option of specifying this character that the emulation converts to ESC before the data stream is forwarded to the printer. You define the replacement character in

the *Configuration: Special Parameters* menu. Specify the character in its hexadecimal form (e.g. 1b for ESC).



– Printer filter
  If you want to connect a Windows printer whose function range deviates from that of the host printer, you have the option of linking in separate printer filters that you can customize yourself. To activate this type of filter, enter the file in the *Configuration: Printer Filter: Enter...* menu that contains the filter functions. A source code example for a filter is supplied with the *FILTER.C* file. You can customize this filter to your individual requirements (more information on this can be found in the Programmer's Reference Guide).

6.5 Troubleshooting

An emulation program is a software product that cannot operate unless the following components are configured correctly:

- PC
- Interface boards
- Host

In addition, you should check the following points if you have problems:

6.5.1 Configuring MT9750

Ensure that the correct character set is selected in the *DSS Mode* dialog box in the *Configuration* menu.

If necessary, check the setting of the *DSS Type* as well.

6.5.2 Connection

You may have made a mistake when setting the connection method.

Ensure that the host name you entered matches either the host name configured on the name server or the host name in the *lmhosts* file.

6.5.3 BS2000 host

Communication errors may be caused by the host generation. To see if this is the case, check the following:

Communicating with the BS2000 host

The following command line - which you enter at an MS-DOS prompt - can be used to check whether the host is responding to your input at all:

`ping [host_name]` or `ping <IP_address>`

Using the emulation

7 Working in emulation sessions

This chapter describes the functions you can use to work with MT9750. The following topics are dealt with in separate sections:

– Administering the sessions
– Session settings
– Exchanging screen data
– Emulation utilities
– Character generation
– Messages in the BS2000 status line

Guidelines on use

Windows programs are generally used with a mouse. MT9750 also offers many operational advantages if a mouse is connected to your PC. In the following description, it is assumed that for the most part you are using MT9750 with a mouse.

You can also use MT9750 without a mouse; in this case use the menu key combinations. If in doubt, consult the Windows User's Guide.

Mouse pointer and cursor

The mouse pointer has the shape of an arrow, while the BS2000 cursor within the session window is represented by a block or underscore character (depending on the configuration). In this manual, "cursor" refers to the mouse pointer and "BS2000 cursor" the cursor within the BS2000 session window.

There is also a position indicator that is used in the context of "Copying screen data". This is represented by a vertical block and is called a marking cursor.

7.1 Administering the sessions

The chapter "Configuration" contains a description of how to configure a session. A prerequisite for the following sections is that you have already configured one or more connection names and a session

You can open and edit existing sessions, save changes, or configure new sessions.

7.1.1 Opening sessions

There are a number of options for opening sessions:

– Opening automatically when the emulation starts
With this option, the sessions to be opened were saved using the *Reconnect on Startup* option (see also "Editing sessions").

– Opening one of the last four sessions
After selecting *Session,* the last four sessions that were opened are displayed. You open these by clicking on them.

– Opening a saved session
After selecting *Session: Open* search for the required session using the directories displayed and open it.

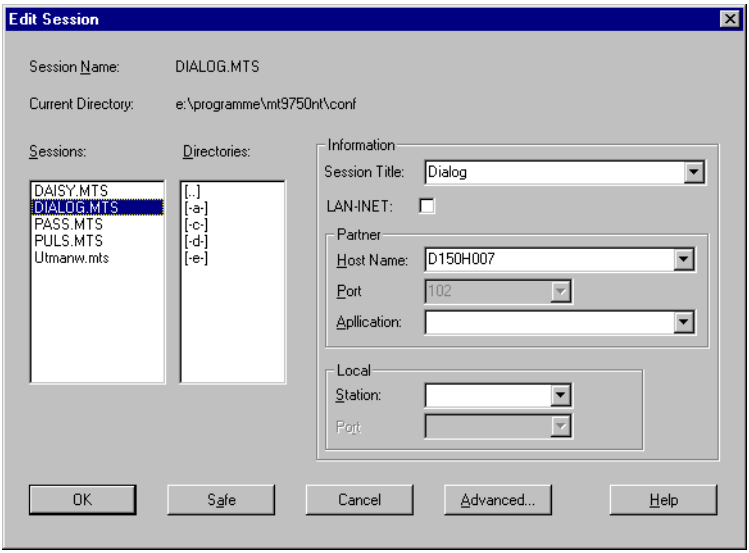
– Opening a temporary session
After selecting *Session: Temporary Session,* a dialog box is displayed in which you can specify the connection parameters in the same way as when configuring a new session. If you have questions on this, see "Configuring a session".

– Opening a new session
The section "Configuring a session" explains in detail how to open a session. Refer to this section now if necessary.

– Opening a session using its icon
If you specified when saving a session that this session is to be started as an icon, you can open the corresponding session by double-clicking on the icon in the *Emulations* group.

7.1.2 Editing sessions

You can use the *Session: Edit* menu to edit sessions. The following dialog box is displayed:



Here you can see and change the connection parameters of the selected session. The advanced parameters (with the exception of the network password) are also available. If you need information on the individual parameters, refer to the section “Configuring a session“ in the “Configuration” chapter.

7.1.3 Saving a session

Saving a session does not refer to saving the session data displayed in the window. Instead, the session parameters such as the character format, session title, display mode, P key assignment etc. are saved.

If you do not specify a directory in which your session is to be saved, the MT9750 sessions are saved in the configuration directory.

The various options for saving sessions are described in the following sessions.

Saving an active session:

► Choose *Save* from the *Session* menu.

The session window remains active after the save. You are only prompted to enter a filename if you are saving a new session. If the session was saved already, the original filename is used.

Saving a new session or an existing session under a new filename

► Select *Save As* in the *Session* menu.

► Enter a filename for your session in the *Save Session As* box. You can also change the directory if you wish. The filename must have the extension *.MTS* (e. g. `PULS.MTS`).

► If you want to save the programmable keys assignment with the new session, click on the *Save Programmable Keys* option. The assignment is then saved in a file with the filename extension *.MTS*.

► Confirm the information with *OK*.

The session window remains active after the save.

The *Save As* option always prompts you to enter a file name, regardless of whether or not the file was saved previously. Using this option, you can save new sessions or save an existing session under a new name.

Saving all open session windows

► Select *Save All* in the *Session* menu.

Using this option you can save changes to all the session that are open. The session windows remain open after the save.

7.1.4 Closing a session

If you want to close individual sessions, you can either use the *Session: Close* menu item or the session control menu. If you exit the emulation program, all sessions still active are closed automatically.

If you have made changes to your session parameters since the last time you performed a save, you are asked in a dialog box whether you want to save the changes, provided you have not activated the disable messages option in the *Configuration: Special Parameters* ... dialog box.

7.1.5 Working with multiple sessions

The emulation program offers you the option of running applications in various session windows in parallel. To do this, simply open other sessions in the *Session* menu. You can use the *Window* menu item to determine how the various session windows are to be displayed: cascaded or tiled. When working with a number of windows (sessions) you can also use this menu to determine which window should be active.

Terminating multiple sessions

All open sessions are closed when you terminate the emulation program. The sessions do not have to be closed individually. The *Close All* option under the *Window* menu item is also available to you for quitting sessions.

7.1.6 Deleting a session

Select *Session: Delete* to delete a session. In the dialog box that is displayed, you can use a directory list to change to the directory in which the session to be deleted is saved. The configuration directory is displayed as the default. Once you have selected the session to be deleted, the session attributes are displayed so that you can check them. If you are sure that you have selected the correct session, confirm the selection and the subsequent request for confirmation with *OK* and the session is deleted.

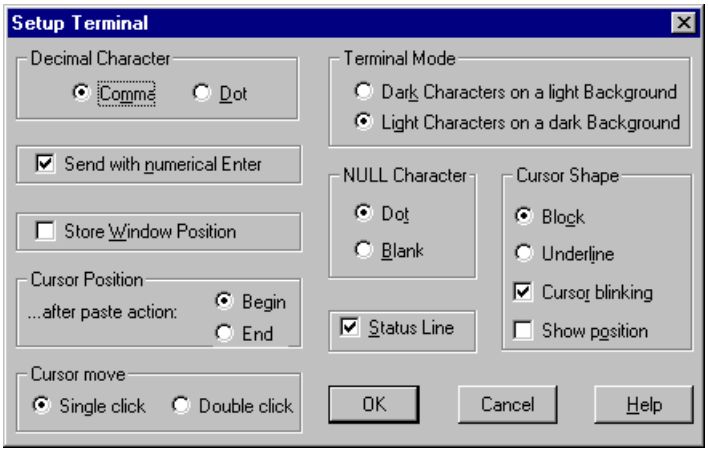
7.2 Session settings

Each session has settings relating to the display attributes and the keyboard mappings. The display attribute settings are divided into terminal setup and color mappings, font, and attribute mappings.

7.2.1 Terminal setup

You can access the terminal setup options via the *Settings: Terminal* menu.

You have the option of configuring decimal characters, the cursor, and the NULL character in the Setup Terminal dialog box. In addition to configuring the appearance of the cursor, you can also specify how the cursor can be positioned using the mouse (*single click* or *double click*), and the position of the cursor after insert operations (this is important, for example, for automating processes). You can also change the appearance of the screen: you have a choice between displaying light characters on a dark background and vice versa as well as the option of displaying the status line. Activate the *Store Window Position* option if you want to retain the window size and position for later use or when you close the session. Finally, you can use this dialog box to define the Enter key on the numeric keypad as a second data transmission key.



7.2.1.1 Displaying the cursor position

When you are automating data communications, it is helpful to know the position of the cursor since this is used by the MT9750 programming language functions. Activate the *Show position* option under *Cursor Shape*; additional information in the status line (e.g. `2/40`) indicates the position (line/column) of the cursor.

Linear specification of the cursor position

The linear specification of the cursor position is the position specified as an integer, which is calculated as the following sum:
(columns per line x (cursor line-1)) + cursor column.

Example:

The position 5/24 (5th. line/24th. column) gives the following result for a screen size of 24x80: 80 x (5-1) + 24 = 344

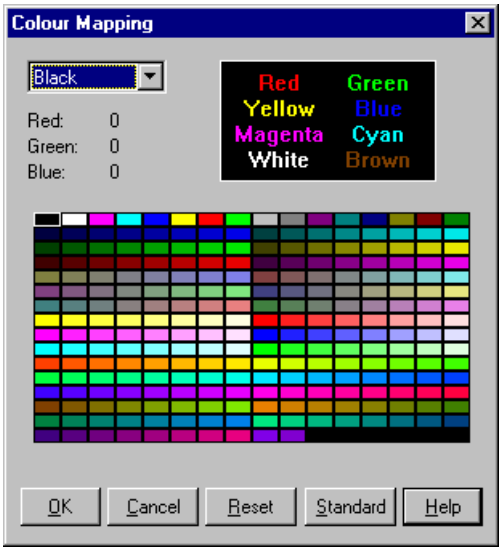
The linear position is displayed in the status line if the MTS file for the session in question contains the following entry:

```
ShowCursorPosLin=1
```

7.2.2 Color mapping

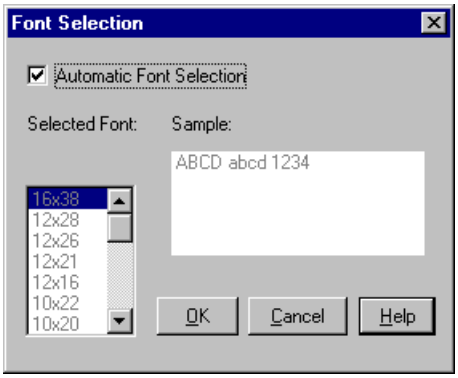
Host applications use colors to highlight information. If you do not like the colors chosen for this purpose, you can map these colors to alternative colors.

A color palette from which you can select a replacement color for each color used by the host is displayed under the *Colour Mapping* dialog box which is accessed via *Settings: Colours...* The color palette complies with the graphics driver installed under Windows.



7.2.3 Font

Use the *Font Selection* dialog box (this is accessed via the *Settings: Fonts...* menu) to define the font to be used for the screen output.



You can choose between having a font selected automatically to fit the window size of the session or selecting a specific font.

The selection of fonts ranges from 6 x 10 pixels to 12 x 28 pixels. Set fonts can only be selected when the *Automatic Font Selection* check box is not activated.

7.2.4 Attribute mappings

BS2000 mask fields have field attributes (*Field Type*) and display attributes (defined by display control characters).

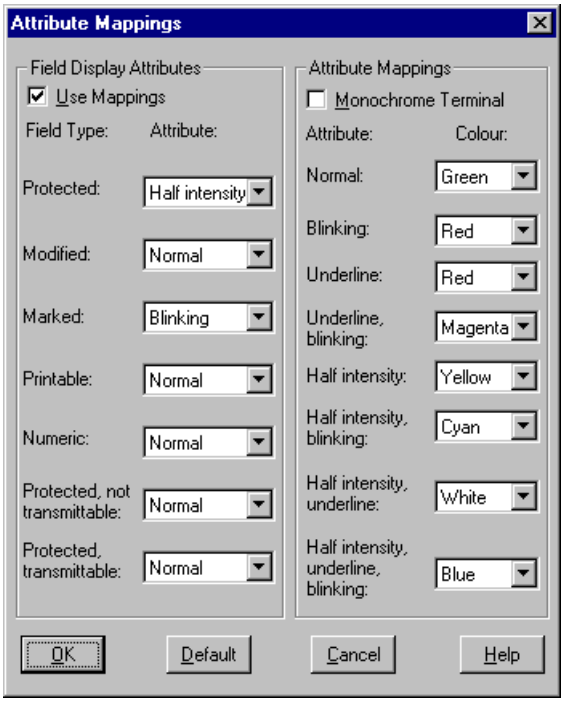
Using MT9750 you can change:

– The mapping of field attributes (e. g. protected or numeric) to display attributes (e. g. *Blinking*, *Underscored* or *Half Intensity*) in order to improve the clarity of the individual field types, and

– The mapping of display attributes (e. g. *Blinking*) to colors (e. g. red) in order to improve the visibility of the individual display attributes.

Mapping is performed under *Settings: Attribute Mapping*.

.



The dialog box contains two fields. Field types are mapped to display attributes (blinking, underline etc.) in the left-hand field *Field Display Attributes*.

You can activate your own mappings with the *Use Mappings* check box. Otherwise the use of display attributes depends on the host application.

This option is only available if a session window is already open.

Mapping field types to attributes:

- Select *Attribute Mapping* in the *Settings* menu.
- Select a *Field Type*.
- Select the *Attribute* to which you want to map the field type.
- Repeat these steps for each field type that you want to map to a display attribute.
- Select the *Use Mappings* check box if you want to work with the mappings.
- Select *OK*.

The right-hand field *Attribute Mappings* is only relevant for color screens. If you are working with a monochrome monitor, select the *Monochrome Terminal* check box in the lower field to deactivate all settings displayed here – the session window then has the display attributes of a monochrome terminal.

Mapping attributes to colors:

If you are using a color screen, you can map a color to a display attribute.

- Select *Attribute Mapping* in the *Settings* menu.
- Select the *Attribute* to be changed from *Attribute Mappings*.
- Select the color to which you want to map the attribute.
- Repeat these steps for each attribute.
- Ensure that the *Monochrome Terminal* check box is not selected.
- Confirm the mapping with *OK*.

7.3 Exchanging data

The use of modern terminal emulations on PCs allows data to be exchanged between host applications and PC applications and data to be reprocessed using user-friendly Windows applications. MT9750 offers a number of options for managing data exchange:

– Via the clipboard (copy and paste)
– Using the DDE mechanism (only with Windows applications that support DDE)
– Via a separate DDE interface (with separate DDE applications – you can find information on creating separate DDE application programs in the Programmer Reference Guide)

7.3.1 Copying and pasting screen data

Copying and pasting of data relates to data within the session window. Data within the session window is referred to as screen data in the following description. Using the functions of the *Edit* menu item, you can select all or part of the screen data and then copy and paste it.

7.3.1.1 Copying screen data

Screen data can be copied to one of the following targets in part or in full:
– To the clipboard
– To a file
– To a printer

Screen data can only be copied if you have already marked a screen area in the active session window.

Invisible and non-printable text (e. g. a password) remains invisible after copying to guarantee data security. Note that only the characters themselves, i.e. no attributes (e.g.underscore, bold), are copied and not all BS2000 characters can be displayed.

You can choose between copying all or part of the screen data.

Copying part of the session

- Open a session.
- Using the mouse, select the right-hand corner within the session window that you want to copy. If you are not working with a mouse, proceed as follows:
  - Using shift + cursor control key, or the *Mark* menu item in the *Edit* menu, switch to marking mode.
  - Define the start of the area to be copied using the cursor control keys.
  - Holding down the shift key, mark the area to be copied using the cursor control keys.
- Select *Copy* in the *Edit* menu.
- Select the destination for the data that is to be copied in the cascading *Copy* menu.

Copying the full active session window

- Open a session.
- Choose *Select All* in the *Edit* menu.
- Select *Copy* in the *Edit* menu.
- Select the destination for the data that is to be copied in the cascading *Copy* menu.

i Using *Select All*, all the data displayed in the current active MT9750 window (without the BS2000 status line) is selected. This includes the screen data that is not currently in the area displayed.

i Note when copying to a file:
The name of the target file should be a valid DOS file name with the filename extension *.DMP*.

7.3.1.2 Pasting screen data

Data can be pasted from one of the following sources:

– From the clipboard
– From a file.

Proceed as follows:

► Open a session.

► Position the cursor at the location in the screen where you want to insert the data.

► Select *Paste* in the *Edit* menu.

► Select the source of the data to be pasted in the cascading *Paste* menu.

Data cannot be pasted to protected fields. In this case, the message ERR is displayed in the 9750 status line.

7.4 DDE data exchange via the clipboard

DDE (Dynamic Data Exchange) is a mechanism for establishing and administering links between various Windows applications. The linked applications can then exchange and update their data automatically.

MT9750 supports DDE data exchange in two ways: DDE data exchange via the clipboard and DDE communication using DDE data elements. Since DDE data exchange via the clipboard is considerably easier to set up and given that more recent Windows applications no longer support DDE communication via data elements, we recommend that you use the clipboard to exchange data. The (outdated) method is only supported for reasons of compatibility. (The description of data exchange via DDE data elements can be found in the Appendix under “DDE data exchange“).

The following steps are required for exchanging data using DDE via the clipboard:

- Select the area from which the data is to be copied.
- Copy the data to the DDE interface using the menu *Edit: To DDE*.
- Insert the link in the target application (e.g. using *Paste* in Microsoft Word.*)*

An automatic DDE connection is thus established and the data from the selected area is immediately copied to the target application whenever changes are made.

7.5 The emulation utilities

MT9750 contains some utilities to help you with your work. You can find the utilities under the *Utilities* menu.

7.5.1 Programmable keys (P keys)

MT9750 supports the 9750 terminal function of programmable keys. The programmable keys are labeled P1 to P20 on the original device keyboard and on the trimodal keyboard and can be programmed by the user directly or via the host application.

In addition, MT9750 offers user-defined P keys (labeled ‘P1’ through ‘P20’), which cannot be overwritten by host applications.

If you are using a standard PC keyboard, you can get an overview of the PC keys that correspond to the P keys under *Keyboard Mappings* in the *Settings*: menu.

Programmable keys can be assigned a key sequence. In this way, for example, you can assign P1 a BS2000 command such as *PRINT*, for example. The assignment of keys is described in the next two sections “Recording programmable keys” and “Editing programmable keys”.

The assignment of programmable keys is valid for the current session and is saved with the session; this means you only have to set the assignment once when you are configuring the session.

Host applications (e.g. the BS2000 program *PLUS*) can overwrite the programmable key assignment. In this case, the letter *H* in the status line informs you that the assignment of the (standard) P keys has changed; user-defined P keys are not affected.

There are two utilities available for assigning the P keys:

– The P key editor (*Utilities* menu*: Programmable Keys Edit...*)

– The P key recorder (*Utilities* menu*: Record Programmable Key*).

7.5.1.1 Recording programmable keys

This function allows you to record input you make in a session and map it to a P key.

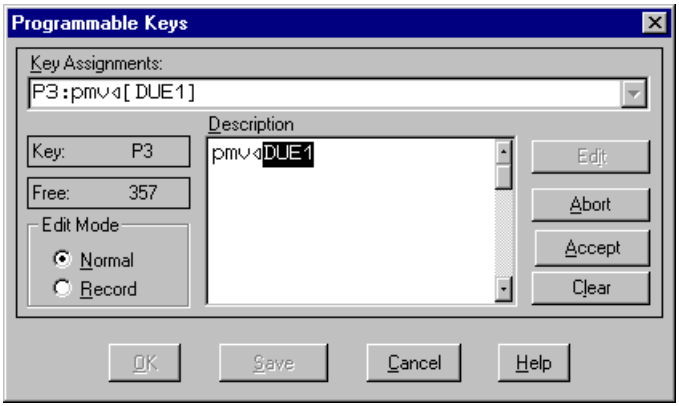
- Select the *Record Programmable Key: Start* menu item in the *Utilities* menu and define the key to be assigned.
- Enter the key sequence to be recorded. Functions such as DUE are also recorded.
- To stop recording reselect *Record Programmable Key.* Once you have selected the *Stop* menu, the assignment is displayed so you can check it. You can now cancel or confirm the assignment.

P key recordings relate to the active session. The P key assignment for a session is saved in a separate file with the filename extension *.MTK*.

7.5.1.2 Editing programmable keys

You can enter and change the P key assignment for a session before the final mapping of the key using the *Programmable Keys Edit* function

.



- ► Open the *Key Assignments* drop-down list box in the *Programmable Keys* dialog box and select the programmable key whose assignment you want to change.
- ► Select the *Edit* command button.
- ► Enter the key sequence you want to map to the programmable key in the *Description:* text box.
- ► You can switch to *Edit Mode* if you also want to record the function keys in the P key assignment:
  - – Select *Edit* if you want to use the standard editing keys such as Backspace and Delete
  - – Select *Record* if you want to record each keystroke in the key sequence, i.e. ← (Backspace) is interpreted as a keystroke to be recorded that does not cause the cursor to move to the left

You can accept or reject the key sequence entered using the *Accept* and *Abort* buttons. You can delete the contents displayed under *Description* using the *Clear* button. If you want to save the new assignment permanently, click on the *Save* button.

The memory space available for key assignment is displayed in the *Free:* field.

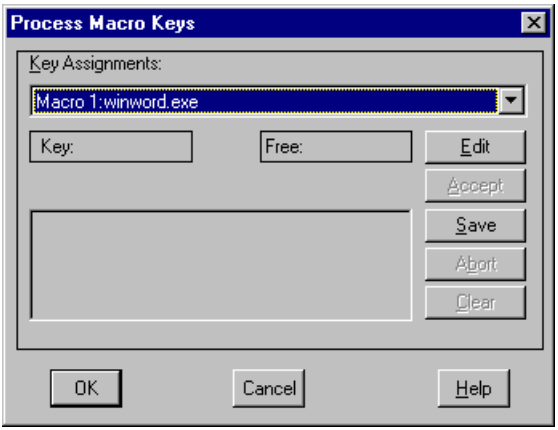
- ► End the editing of P keys with *OK*.

7.5.2 Macro keys

MT9750 contains macro keys which must be assigned in the same way as programmable keys. These are used to start other Windows applications.

7.5.2.1 Processing macro keys

The dialog box for processing macro keys is similar in structure to the dialog box for editing the P keys – however, there is no function for recording keys. You can call this dialog box using the *Utilities: Process Macro Keys ...* menu.



First, select the macro key you want to change, then choose *Edit* and enter the command for calling the Windows application in the text field.

Eight macro keys are available for assignment; these are called MA1 through MA8. You can call these keys in the same way as the P keys, i.e. via the function key window or the function key selection window.

7.5.3 Starting file transfer

MT9750 supports the parallel operation of two file transfer products from Siemens Nixdorf: You can call openFT as of Version 6.0 from the emulation and also the Virtual File Transfer (VFT) supplied. If this is not yet installed. you can reinstall the VFT by recalling the SETUP program.

- Select *Filetransfer* in the *Utilities* menu. No file transfer product is installed if this menu item is not offered.

► The next menu lists the file transfer products installed. If only one product is installed, the other is grayed out.

After making you selection you change to the relevant file transfer window in which you can enter file transfer information.

You can also access the file transfer program via the entries in the *Start* menu under *Programs*.

7.5.4 Working with the keyboard mapping program

This section describes how to customize the keyboard mapping of your PC to meet your individual requirements.

The advantage of this is that you have the mapped 9750 functions as well as functions for using certain PC attributes available directly on your (PC) keyboard. Of course you can also call the keys via Windows using *Keyboard Mappings*.

The keyboard mapping program

The keyboard mapping program is a component of MT9750. It offers the user the option of customizing the PC keyboard to meet their individual requirements.

In the keyboard mapping program, the levels *Normal*, *Shift*, *Ctrl, Shift Ctrl, Alt, Shift Alt, Ctrl Alt (AltGr),* and *Shift Ctrl Alt* are available for mapping. Only some keys at the various levels of the PC keyboard cannot be mapped freely with the keyboard mapping program. These are a dark color in the keyboard mapping program.

The MT9750 keyboard mapping program supports MF2 keyboards, some trimodal keyboards, and the bimodal library keyboard. The method for using the keyboard mapping program is independent of the keyboard connected and the resulting keyboard layout.

The keyboard mapping program can be started in two ways:

– Either by selecting the icon in the program group or
– From the *Utilities: Start Keyboard Mapping Program* menu

After calling the program, a keyboard image corresponding to the layout of the selected keyboard is displayed on the screen.

The keyboard mapping program can only be used with the mouse. It can be configured for fast access to certain functions using a toolbar (menu: *Settings: Toolbar*).

If certain characters (e.g.national characters, ê) are to be mapped to the keyboard, these must be copied to the keyboard from the *Character Set* menu. The procedure for doing this is described in the following sections.

Creating an individual keyboard mapping

When you call the keyboard mapping program from the emulation *Utilities* menu, the last keyboard mapping loaded is displayed. If you call it by clicking on an icon, the mapping to be changed first has to be opened.

Using the *File* menu you can load another keyboard assignment, or save the changed assignment under a new or old name.

Proceed as follows to change the keyboard mapping:

- Open the file with the mapping you want to change (this is not necessary when calling the program from the emulation).
- Click on the item containing the desired mapping. This item can be another key, a 9750 function from *Display: Functions,* or a special character from *Display: Character Set*. The item is highlighted.
- Click on the key whose mapping you want to change. To do this, you may need to switch keyboard levels using the *Level* menu.
- Repeat this process for each key to be assigned.
- Save the new mapping under *File: Save*. The extension of a keyboard mapping file should be *.KMP*. If a keyboard mapping you created is to be loaded in a session, you can use the *Settings: Keyboard Mappings: Load Mapping* menu to do so.

If you change the keyboard mapping from the emulation, the change is effective immediately and need not be saved first.

Searching for a specific assignment

If you do not know which key on your keyboard is assigned a specific function or character, you can search for this key. To do this, click on the character (or function) you want to find in the corresponding display and press *Options: FinD Mapping* or *Options: Find Functions/Control Sequences.* (You can also press F3.) The key you are looking for on your keyboard is displayed. Changing keyboard levels

The *Level* menu allows you to display and map the various keyboard levels of the PC keyboard connected. The levels are also changed by clicking on the *Shift*, *Ctrl*, *Alt*, or *Alt Gr* keys. Press F5/F6 to move to the next/previous level.

Changing levels leads to a corresponding change in the keyboard window or mapping of the keys.

Mapping functions to the keyboard

Display: Functions displays all the 9750 functions that are available as well as additional functions such as user-defined P keys or macro keys (MAx) in a table.

- ► Click on a function in the table with the left mouse button. The selected function is highlighted.
- ► Then, using the left mouse button, click on the key on the displayed keyboard to which you want to map the function you selected.

Mapping special characters to the keyboard

After calling *Display*: *Character* all alphanumeric characters supported by MT9750 that can be mapped to the keyboard are listed in a table. It should however be noted that not all available characters are supported by the host applications and the printer connected.

The table corresponds to the complete character set of the Country Extended Code Page (CECP) with all national special characters. This means that the dead keys (diacritic characters) that would otherwise be required to display a corresponding national character on a screen are not needed. Example: é can be mapped directly to a key with the keyboard mapping program.

The mapping of alphanumeric characters to the keyboard is done in the same way as the mapping of 9750 functions.

Mapping the function selection window (hotspots)

If you find the list of the 9750 key functions too unclear, you can display a selection of the 9750 keys that you use most often in a separate window. This function selection is also called a hotspot. It is saved in a file with the filename extension *.HOT*. If you want to use hotspots with different application areas, it is a good idea to save them in different files and load them in the emulation as required.

You can activate the window with the selection in the emulation by selecting *Settings: Keyboard Mappings: Hotspots*.

You assign the hotspots in the keyboard mapping program as follows:

- Open the window containing the function selection using *Display: Hotspots.*
- Click on a required function, special character or key with the left mouse button and drag it into the hotspot window.
- Once you have mapped all of the required hotspots, save the selection using the *File: Save As ...* menu in the hotspot window. This menu also contains menu items for the subsequent editing of the hotspots.

You must load the file in the emulation before the selection is available to you. To do this, select the file containing the required mapping in the *Settings: Keyboard Mappings: Load Function Selection (hotspots) ...* menu.

The function, etc. is now available in the emulation as a hotspot.

You can add to or change the settings in the hotspot window at a later data. To do this, change to the keyboard mapping program, open *Display: Hotspots* and load the hotspot file to be changed. Remember to save the changes when you terminate the keyboard mapping program.

Examples for customization of mappings

The procedure for remapping keys is explained in the following examples.

Example1: z and y are to be swapped:

- Click on z with the right mouse button.
- Then click on y with the left mouse button.

Example 2: The function LA1 is to be mapped to the scroll key of a PC keyboard:

- In the *Display* of the *Functions*, click on LA1 with the left mouse button.
- On the keyboard layout, click on the scroll key with the left mouse button.

7.5.5 Recording sessions

The *Utilities* menu contains the menu item for recording sessions. This means that recordings of the data stream can be made that can be used for error analysis.

This option is only available if a session window was first opened.

You can record the full data exchange between the host and emulated data display terminal as well as parts thereof. The following options are available for this:

– Record the data stream that MT9750 transfers to the host

– Record the information that the data display terminal received from the host

– Record the full exchange between MT9750 and the host

You can start and end session recording at any time during the session.

Starting session recording

► Select *Record Session: Start* from the *Utilities* menu.

► Select a directory from the list and enter a filename in the *Log to File:* text field. The filename must have the extension *.REC*.

► Now select the recording mode.
You have the following options:
  – *Send only* or
  – *Send and receive* or
  – *Receive only.*

► Select the file format.
You have the following options:
  – *Text* for files that can be edited using a text processing program. You can choose between recording in *ASCII* or in *EBCDIC* format.
  – *Binary* for the binary recording of the data stream (without conversion).

► Confirm the entries with *OK* to start recording.

Canceling session recording

Before quitting the emulation program you must cancel any session recordings that are currently taking place if the recorded information is to be written to the specified file.

- Select *Record Session: Stop* from the *Utilities* menu. The *Confirm Session Recording* dialog box is displayed on the screen. This displays the name of the file to which the session is currently being recorded.
- Select *OK* to confirm the recording. (Select *Cancel* to cancel the recording.)

7.5.6 Function keys window

All keys on the 9750 data display terminal are available to you if you have a trimodal keyboard connected to your PC. For users of a PC keyboard the emulation maps some keys to PC key combinations so that you can also use all the 9750 key functions on the PC keyboard.

Using the *Keyboard Mappings: Function Keys Window* option in the *Settings* menu, you can activate a window in which all the 9750 key functions are displayed and can be initiated by clicking with the mouse.

You can adjust the size and position of the window (and minimize it to an icon).

Calling the Function Keys Window

- Select *Keyboard Mappings: Function Keys Window* in the *Settings* menu.

You can display the window with the *Keyboard Mappings* constantly while working with a session window.

- To close the window, click on the control menu box in the upper left corner.

You do not need to close the Function Keys Window when exiting MT9750. When you restart, the emulation opens the Function Keys Window at the same location (sometimes as an icon).

7.5.7 Function selection (hotspots)

If you defined a selection of functions as so-called hotspots, you can display the window for this selection. To do this, activate the *Function Selection (Hotspots)* option under *Settings: Keyboard Mappings.*

It displays the last selection loaded in all sessions. To use different hotspots in different sessions, generate a number of hotspot files.

You load the relevant selection using the *Settings: Keyboard Mappings: Load Function Selection (Hotspots)* ...menu item.

7.5.8 Keyboard mappings

To call 9750 key functions from the keyboard, the functions were also linked to key combinations to display them in the Function Keys Window.

So, for example, the P1 key on the 9750 keyboard is mapped to the F1 function key on the PC keyboard under MT9750. The keyboard mappings are set by MT9750 and cannot be changed. You can display the mapping of functions to key combinations. To do this, select *Keyboard Mappings* in the *Keyboard Mappings* submenu under the *Settings* menu.

MT9750 displays the correct key combinations for your PC keyboard automatically.

Activating a key

You can also initiate each key function as displayed under *Keyboard Mappings* by double clicking on the corresponding row. This saves you having to input an ESCAPE sequence.

7.6 Composing characters

Characters can be created for which there are no keys on the keyboard using the compose key function. The COMPOSE key is used for this purpose. If there is a COMPOSE key on your keyboard (trimodal keyboard), use it. This function is represented by the ALTGR key on PC keyboards.

The compose function is only available if your data display terminal is working in 8-bit mode. The host application must also be running in 8-bit mode (information on the DSS mode can be found in the section on configuring the data display terminal).

Composing characters

- Press and release the COMPOSE key (or Alt Gr).
- Enter a character sequence contained in the table of compose characters in the chapter “Character sets, compose characters, and printer control characters”. The composed character is displayed on the screen.

If the character sequence you entered is not permitted, your PC beeps, and no character is displayed on the screen. You must then start the whole process from the beginning by pressing the COMPOSE key again. If you press the COMPOSE key by mistake, you can cancel the process by pressing the ← key (Backspace).

7.7 If you require help

You can call detailed, context-sensitive information for MT9750.

7.7.1 General help

MT9750 provides a general online Help feature which brings you through certain procedures, e.g. configuring sessions or printing files, step-by-step. There is a reference system for the Help text in the usual Windows format. To call the index, select *Utilities* from the MT9750 menu bar.

Note that you cannot call the Help function using the function key F1. This is reserved for other functions. So, for example, when using the standard PC keyboard it is allocated the 9750 key P1.

7.7.2 Help in dialog boxes

There are Help buttons in the more complex dialog boxes which you can use to find information on completing the dialog boxes. These buttons provide you with a function for requesting context-sensitive Help.

7.8 Status line display

The status line or device status line that is displayed at the bottom of the screen is described in detail in the Operating Manual for the 9750-type data display terminal. The following description is intended to explain the messages displayed in this line.

`BEL`

`BEL` is called or deleted by control characters from the application program. You can reset the display by pressing RS.

`DIA`

The `DIA` light goes on when you switch to dialog mode and goes off when you exit this mode. Dialog mode starts when you press the data transmission key (RECV key) and ends when the message is received from the BS2000 host.

`ERR`

`ERR` flashes if you made an error in input; when you correct the input or press the RS key, the display goes out once again.

`F0, F1, F2, F4, F8`

These displays indicate errors relating to hardcopies on the local printer.

`H`

`H` indicates that the host has changed the P key mapping.

`HPT`

The `HPT` light goes on when you press the HPT key.

`INS`

The `INS` light goes on if you press the Insert Character; it goes off if you press the RS key or if data transmission is initiated.

`KEYB`

This display is lit up when the keyboard is connected and operable. If the keyboard is not connected or is defective, `KEYB` flashes.

LINE

The LINE light goes on when the connection is established to the computer.

MCR

If the host requested an authorization card, the MCR light goes on; once the information on the authorization card is transferred to the computer, the display disappears.

MCR ERROR

This is displayed if an error relating to the card reader connected occurs.

NUM

The NUM light goes on if the cursor is moved in a numerical field; as soon as the cursor leaves the field again the display goes out again.

Number (e.g. 2/40)

The two numbers specify the position of the cursor (line/column). If you prefer a linear specification (position in the data stream, calculated from the top of the screen) you can configure this setting (see help „Terminal setup“, „Displaying the cursor position“).

POLL

POLL flashes if no signal is received by the host but the line is nonetheless available.

PR1, PR2 ... PR7
PDEV1, PDEV3

If a print job is started by a user or the host program, this status display lights up until the print process terminates or you press the RS (Reset) key. The display lights up if there are problems with the connection to the printer or with the printer itself; if an error occurs with the print output, an additional flashing error code (F0, F1...) is displayed.

RECV

The RECV light goes on if data transmission has begun and goes off when the data has been transmitted or you press the RS (Reset) key after a transmission error. The RECV display flashes if data transmission was canceled because of a transmission error.

XREQ

XREQ stands for send request and always lights up when a key that initiates exchange of data is pressed. The light goes out when the data exchange has begun or you press the RS key. XREQ flashes once data exchange is cancelled.

The following error messages are only displayed if you are using a card reader:

CARD INVALID

The display shows that the card has not been read correctly. Try to insert the card in the reader once more. If the card is defective or invalid, use a new card.

CARD BLANK

The card was inserted incorrectly or a blank ID card was used. Insert the card into the card reader in the correct position or use a new card.

8 Printing

This chapter deals with the various aspects of the print function. The following subjects are described in separate sections:

– Overview of the print options
– Output to a printer
– Printing host files (bypass print)
– Printing the screen contents
– Redirecting the print output
– Printing using 8-bit character sets

8.1 Overview of the print options

MT9750 supports both bypass and hardcopy print output.

Bypass

Bypass print is when host data is printed to a printer connected to the data display terminal (in this case a PC). The print data is not displayed on the screen, it is diverted past it (hence the name bypass).

MT9750 uses passive sessions for bypass printing.

Hardcopy

Hardcopy print is when screen data from a data display terminal (in this case an MT9750 session) is output to a printer. It does not matter whether the print job was initiated by the data display terminal user (or 9750 session), or by an instruction from the host. If the print job was initiated by the latter, it is referred to as “host-initiated hardcopy”.

Apart from these BS2000-specific print functions, there are two additional print functions available to you with MT9750:

With one you can copy screen data to a printer, with the other you can print the screen contents without having to position the cursor beforehand as an extension of the BS2000 hardcopy. Read the following sections for further details.

8.2 Output to a printer

The print data is transferred to a Windows printer. For information on setting up these printers, see the chapter “Configuration”.

You have to define a local printer before print can be output. You set the printer under *Local Printer* in the *Configuration* menu. If you are printing to Windows printers, use the Windows Print Manager functions. Each print job (hardcopy, bypass, copying to the printer) produces a separate print list.

If you want to print host files to a local printer (bypass), you may have to specify the host printer type generated in BS2000. If generated printers and connected printers do not match, MT9750 has to convert the print data. Specify the host printer in the *Configuration: Peripherals: Host Printer* dialog box. You can also find the transparent print option there (if the conversion of print data is not necessary or desired).

If you are printing from a number of sessions in parallel, the first print job is processed and the others are rejected with an error message until the print job is finished.

8.3 Printing host files (bypass print)

If you want to output host files to your local printer, use so-called *bypass print*. In this mode, data is transferred directly from the host to the printer, bypassing the screen (i.e. it is not displayed on the screen).

MT9750 supports the printer bypass function that allows you to output host files to a file or to a printer connected to your PC. As bypass print can only be initiated from the host, you have to use the BS2000 spool program RSO (Remote SPOOL Output) to print and have a passive session open. Enter the following to activate a printer in the RSO:

```
/SD DEV= <PRINTER NAME>
```

Printing is then started using the following command:

```
/PRINT <host file>, DEV=<PRINTER NAME>
```

Outputting host files to the PC printer

Ensure that the host for outputting print data to your PC is set up and that the host printer and the local printer for your session are configured.

A passive session in which both the host printer and the local printer have been configured are required for bypass printing.

- If necessary check the settings for redirecting the print output (in the *Configuration: Peripherals:Print Redirection* menu).
- Start printing from your BS2000 application (see above).

As no end criterion exists for bypass printing, the end of a bypass print job is subject to time-out monitoring. If there are pauses when a bypass data stream is being transferred from the host, the bypass print job may be divided into a number of small bypass jobs, each of which is handled as a separate print job. The timer for monitoring this can be set in the *Special Parameters* dialog box (accessed via *Configuration: Special Parameters: Terminal/Printer*).

The control characters taken into account when interpreting the data stream for bypass print are listed in the chapter “Character sets, compose characters, and printer control characters“.

8.4 Printing the contents of the screen

If you want to output a screen dump of the current session window to the local printer, you can choose either the hardcopy mode or the Windows *Copy* function from the *Edit* menu.

The printer control characters carriage return (CR), line feed (LF), horizontal tabulation (HT), backspace (BS), and form feed (FF) are used with these print functions. Other control characters are not processed, they are output as spaces.

Ensure that print output is carried out using the character set that was set for the emulation (in accordance with the setting of the *DSS Mode* and *Character Set* in the *Configuration: Terminal Settings [DSS]* menu).

i If the specified country variant is not supported by the printer, it switches to the ANSI character set and a message is displayed that the print output may contain errors. This message can be suppressed if, for example, you are satisfied with the end result. To do this, activate the *Message OFF* option in the *Special Parameters* dialog box (accessed via *Configuration: Special Parameters: Terminal/Printer*).

When using a Windows printer, the print output depends on the Windows variant used:

– in standard Windows (Western version), the ANSI character set, which is most like the character set ISO 8859-1, is used
– in Eastern European Windows, the character set 8859-2 is mapped to the Eastern European ANSI character set
– in Cyrillic Windows, the character set 8859-5 is mapped to the Cyrillic ANSI character set

The print output may contain errors if an 8-bit character set other than the one specified is used.

8.4.1 Hardcopy

You can create a screen dump of the current session on your local printer using the *Hardcopy* option. The screen dump starts at the position of the BS2000 cursor and encompasses all characters up to an end marker or the lower right corner of the screen.

Hardcopy output can be initiated either by the user or the host application. Starting the print job with a LAx key is referred to as a “manual hardcopy”. One of the LAx keys is the default key for outputting hardcopies. You can use the *Keyboard Mappings* list to determine the keys on your PC keyboard that are assigned to these functions.

Creating a hardcopy of the current session window

- Position the cursor at the location on the screen to be used as a starting point for printing the data.
- If necessary, check the settings for redirecting printing (in the *Configuration*: *Peripherals:Print Redirection* menu.
- Press, for example, the LA1 key.

`PDEV1` is displayed in the status line for the duration of the print job.

8.4.2 Printing the whole screen

MT9750 includes a function that you can use to make a hardcopy of the whole screen contents regardless of the position of the cursor. You can find the function in the *Session: Print Screen* menu.

Once you have selected this item, the screen contents are copied to the local printer and output there in the same way as manual hardcopy. The tasks carried out under *Configuration: Peripherals:Print Redirection* also take effect here.

The function can also be executed using the mouse. To do this, click on the printer symbol in the toolbar. You can also use the keyboard mapping program to map the *BSD* function to a key.

8.4.3 Copying to the printer

The contents of the session window (screen data) can be marked and copied to the PC printer.

Choose the *Copy* option in the *Edit* menu to copy the screen data to the PC printer. You must first mark the relevant data using the mouse or the *Mark* option in the *Edit* menu. If you want to mark all the data displayed in the session window, choose the *Select All* option in the *Edit* menu. With the *Select All* option, data in the session window may be selected that lies outside the current window boundaries.

If the marked area contains invisible or non-printing characters, these are output to the printer as spaces. Printer control characters are not interpreted.

The copying process consists of two steps. First you must mark the text either using the mouse or the *Mark* function or *Select All* function in the *Edit* menu.

Marking screen data

- Marking screen data using the mouse:
  - ► Pull the mouse pointer over the text range that you want to copy.
- Marking screen data using the keyboard:
  - ► Select the *Mark* option in the *Edit* menu.
  - ► Move the cursor to the first character in the range to be marked using the cursor keys.
  - ► Mark the characters using SHIFT + arrow keys.
- Marking screen data using the *Select All* function.
  - ► Choose *Select All* in the *Edit* menu.

Copying a marked session range to the PC printer

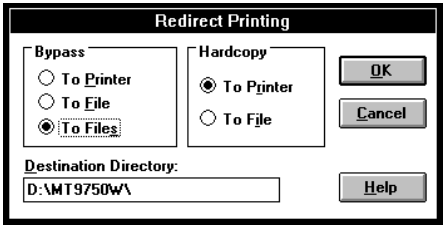
► Choose *Copy* in the *Edit* menu.

► Choose *To Printer* in the cascading *Copy* menu.

You can copy the data to the clipboard or a file in the same way. When copying to a file, you can save the data to separate files or append it to an existing file.

8.5 Redirecting print output

You can redirect the hardcopy or bypass print job to one or more files. This is done in the *Configuration: Peripherals: Print Redirection* menu. You can also redirect the output of the *Copy To Printer* function using this option. This setting is session-specific.



If you redirect the bypass output to an individual file, MT9750 creates the file *bypass*. New bypass output overwrites this file. If you redirect the bypass output to a number of files, MT9750 creates the files *bypass.000* to *bypass.999*.

If you redirect the hardcopy output to one file, MT9750 creates a file *Hardcopy.nnn* (000<=nnn<=999) for each hardcopy.

The emulation program searches for the redirection file with the highest number and then uses the next highest number, e.g. if it finds *bypass.005*, it uses *bypass.006* for the next output. After the *bypass.999* file, the file with the lowest number is used. This is then overwritten in further print jobs.

When redirecting print, the data will already have been edited for the specific printer before it is stored in the file, i. e. it is saved in a format that can be edited by the target device. A natural prerequisite is that the local printer (and if necessary the host printer) is configured appropriately.

8.6 Printing using 8-bit character sets

The BS2000 character set is converted to ANSI (the Windows PC printer character set) if you use a Windows printer. The ISO 8859-1 8-bit character set is the only one that comes close to the ANSI character set. Errors can occur in the output if you use a different 8-bit character set.

8.7 Differences between TRANSDATA and Windows printers

Note the following properties when using Windows printers:

- The *Carriage Return* (CR) control character is interpreted as the *Carriage Return* + *Line Feed* (LF) sequence. Any subsequent *Line Feed* is ignored.
- When the *Backspace* (BS) control character is used, note that the character output before *Backspace* is replaced by the character after the BS, i.e. the two characters are not printed on top of each other.

Example:

Sequence	Output (original)	Output (Windows)
a BS ^	â	^

- The following defaults are used for Windows printers:

– first print line At 0.5”
– last print line At 10.5”
– form length 11”
– pitch 10 cpi
– tab stops At position 1, 9, 17 etc. on the basis of 10 cpi pitch

Looking up information

9 The diagnostic file

MT9750 logs various activities such as the opening and closing of sessions, the starting and ending of the emulator, and the termination of the connection in a *MT9750.DIA* file.

The maximum size this file can reach in ASCII format is 500 Kbytes. If this is exceeded, the file is saved with the filename extension *.OLD* and further results are written to a new diagnostic file. This file is created in the configuration directory, unless otherwise configured.

An example of entries in the *MT9750.DIA* file:

```
1 25.09.95 14:53:59.24 A41C MT9750 4.1A0002 sym 10 FF 0000000000FF
2 25.09.95 14:54:20.72 A41C MT9750 4.1A0002 sym 10 02 000000000000
```

9.1 Configuring the diagnostic tool

Diagnostics are activated when the emulator is supplied; the diagnostic file is created in the configuration directory.

You can change these settings. To do this, append a section *Diagnostics* to the *MT9750.INI* file as follows:

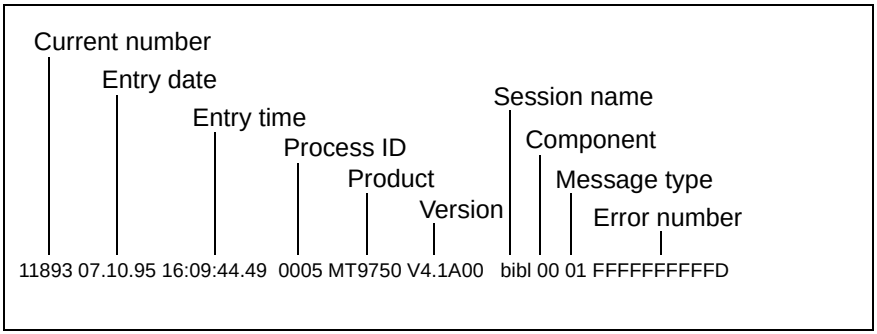
```
[Diagnostics]
TracePath=C:\DIAG
DiagSize=0
```

TracePath:
: Specify the path for the diagnostic file here. If this path does not exist on your PC, the file is written to the directory of shared files (default).

DiagSize:
: This parameter specifies the size of the diagnostic file in Kbytes. The values can range from 0 to 500. If `DiagSize=0` is set, the data is not written to the diagnostic file.

9.2 Structure of the diagnostic file

Each of the results to be logged results in an entry in the diagnostic file with the following structure:



Meaning of the diagnostic entries

The current number always relates to an emulation session. It starts at one.

The error number is normally set to 0 and, if an error occurs, can provide Customer Service with information on the problems that occurred.

10 The keyboard

The MT9750 supports the connection of various keyboards. All the original device keys are available on the trimodal keyboards, as are the 97801 data display station keys. The following section lists the keyboards that are supported and explains the BS2000 device functions. These device functions are also available if you are not using a trimodal keyboard, although they must then be input using key combinations, or initiated by clicking on the Function Keys Window.

The Function Keys Window is accessed via the *Settings: Keyboard Mappings: Function Keys Window* menu.

10.1 Keyboards supported by MT9750

If you have the option of connecting a trimodal keyboard, you should do this, as all the keys of the original data display station are available on it and you do not need to map the keyboard.

All trimodal keyboards for which there are suitable drivers for the Windows variant used are supported. Contact Customer Service to obtain the driver diskette.

The standard PC keyboard is also supported.

The option of switching to an alternative character set is supported under Cyrillic Windows.

10.2 BS2000 keys

You can find detailed information on the BS2000 device functions activated by the 9763 keyboard in the manual „TRANSDATA Data Display Terminals - Functional Description", the full details of which can be found in the „Related publications" chapter. Nevertheless, the following section gives a brief description of the most important functions to help you in understanding the key functions of the 9750 in the *Keyboard Mappings* list box.

The BS2000 key functions can be used in formatted mode and unformatted mode; the following description is concerned with unformatted mode - functions that are identical in formatted mode are indicated by +formatted mode.

AFG (Delete a character)

Deletes the character at the current cursor position; any subsequent characters shift to the left.

AFZ (Delete a line)

Moves all lines below the line containing the cursor up a line.

AM (Beginning marker)

Start flag for the data transmission to the host. (+formatted mode)

LSP (Delete memory)

Clears the screen completely. (+formatted mode)

DÜ1 (Data transmission)

Transmits data to the BS2000 host. (+formatted mode)

DÜ2 (Data transmission)

Transmits data to the BS2000 host. (+formatted mode)

EFG (Activate insert mode)

Moves the characters starting from the current cursor position to the right by the number of characters inserted. This mode is canceled by pressing RS. (+formatted mode)

EFZ (Insert a line)

Moves the characters in the line containing the cursor down a line and also moves the characters in subsequent lines.

EM (End marker)

The end marker indicates the end of the data range to be transmitted to the host or printer or indicates a range to be deleted using LVD. (+formatted mode)

LA1 (Print using device 1)

Exchanges data between data display terminal and printer. The data is sent to print device 1. (+formatted mode)

LA2 (Print using device 2)

Sends the data to print device 2. (+formatted mode)

LA3 (Print using device 3)

Sends the data to printer 3. (+formatted mode)

LSP (Delete memory)

The entire screen memory is flushed.

LVD (Delete variable data)

Deletes the characters from the current position of the cursor to an end marker or the lower right corner of the screen.

LZE (Logical line end)

Indicates the logical line end. A logical line can be one or more lines.

LZF (Delete to line or field end)

Deletes the characters between the current cursor position and the line end or an end marker.

MAR (Mark)

The mark function can only be used in formatted mode. A field can only be marked if it contains the cursor and has the field attribute Markable. The marked field flashes or has the allocated color.

RS (Reset)

Resets the error message, send request, and operation statuses; the contents of the data memory are not deleted. (+formatted mode)

RU (Scroll Up)

Moves the characters from the last line on up a line. The characters in the first line are lost.

SBA (Cursor to start of screen)

Positions the cursor at the start of the screen (upper left).

11 Character sets, compose characters, and printer control characters

11.1 Character sets

MT9750 does not support a function for loading character sets from the host.

The tables in this chapter show the 7-bit and 8-bit character sets that are supported by MT9750 and can be displayed.

MT9750 supports the following character sets:

7-bit	**8-bit**
International German English Italian French Spanish Danish Swedish	Roman alphabet no. 1 ISO 8859-1 Roman alphabet no. 2 ISO 8859-2 Roman/Cyrillic ISO 8859-5 Roman/Greek ISO 8859-7 Roman alphabet no. 5 ISO 8859-9

11.1.1 Character set ISO 8859-1 (Roman alphabet no.1

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
00			SP	0	@	P	`	p			NBSP	°	À	Ð	à	ð
01			!	1	A	Q	a	q			¡	±	Á	Ñ	á	ñ
02			"	2	B	R	b	r			¢	²	Â	Ò	â	ó
03			#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
04			$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
05			%	5	E	U	e	u			¥	µ	Å	Õ	å	õ
06			&	6	F	V	f	v			¦	¶	Æ	Ö	æ	ö
07			'	7	G	W	g	w			§	·	Ç	×	ç	÷
08			(	8	H	X	h	x			¨	¸	È	Ø	è	ø
09			)	9	I	Y	i	y			©	¹	É	Ù	é	ù
10			*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
11			+	;	K	[	k	{			«	»	Ë	Û	ë	û
12			,	<	L	\	l	|			¬	¼	Ì	Ü	ì	ü
13			-	=	M	]	m	}			SHY	½	Í	Ý	í	ý
14			.	>	N	^	n	~			®	¾	Î	Þ	î	þ
15			/	?	O	_	o				¯	¿	Ï	ß	ï	ÿ

11.1.2 Character set ISO 8859-2 (Roman alphabet no.2)

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
00			SP	0	@	P	‘	p			NBSP	°	Ŕ	Đ	ŕ	đ
01			!	1	A	Q	a	q			Ą	ą	Á	Ń	á	ń
02			"	2	B	R	b	r			˘	¸	Â	Ň	â	ň
03			#	3	C	S	c	s			Ł	ł	Ă	Ó	ă	ó
04			$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
05			%	5	E	U	e	u			Ľ	ľ	Ĺ	Ő	ĺ	ő
06			&	6	F	V	f	v			Ś	ś	Ć	Ö	ć	ö
07			’	7	G	W	g	w			§	ˇ	Ç	×	ç	÷
08			(	8	H	X	h	x			¨	¸	Č	Ř	č	ř
09			)	9	I	Y	i	y			Š	š	É	Ů	é	ů
10			*	:	J	Z	j	z			Ş	ş	Ę	Ú	ę	ú
11			+	;	K	[	k	{			Ť	ť	Ë	Ű	ë	ű
12			¸	<	L	\	¦	¦			Ź	ź	Ě	Ü	ě	ü
13			¯	=	M	]	m	}			SHY	˝	Í	Ý	í	ý
14			.	>	N	^	n	~			Ž	ž	Î	Ţ	î	ţ
15			/	?	O	_	o				Ż	ż	Ď	ß	ď	˙

11.1.3 Character set ISO 8859-5 (Roman/Cyrillic)

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
00			SP	0	@	P	‘	p			NBSP	А	Р	а	р	№
01			!	1	A	Q	a	q			Ё	Б	С	с	с	ё
02			"	2	B	R	b	r			Ђ	В	Т	в	т	ђ
03			#	3	C	S	c	s			Ѓ	Г	У	г	у	ѓ
04			$	4	D	T	d	t			Є	Д	Ф	д	ф	ж
05			%	5	E	U	e	u			S	Е	Х	е	х	s
06			&	6	F	V	f	v			I	Ж	Ц	ж	ц	i
07			’	7	G	W	g	w			Ї	З	Ч	з	ч	ї
08			(	8	H	X	h	x			J	И	Ш	и	ш	j
09			)	9	I	Y	i	y			Љ	Й	Щ	й	щ	љ
10			*	:	J	Z	j	z			Њ	К	Ъ	к	ъ	њ
11			+	;	K	[	k	{			Ћ	Л	Ы	л	ы	ћ
12			‚	<	L	\					Ќ	М	Ь	м	ь	ќ
13			–	=	M	]	m	}			SHY	Н	Э	н	э	§
14			.	>	N	^	n	~			Ў	О	Ю	о	ю	ў
15			/	?	O	_	o				Џ	П	Я	п	я	џ

11.1.4 Character set ISO 8859-7 (Roman/Greek)

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
00			SP	0	@	P	‘	p			NBSP	°	ΐ	Π	ΰ	π
01			!	1	A	Q	a	q			`	±	A	P	α	ρ
02			"	2	B	R	b	r			´	²	B		β	ς
03			#	3	C	S	c	s			£	³	Γ	Σ	γ	σ
04			$	4	D	T	d	t				'	Δ	T	δ	τ
05			%	5	E	U	e	u				΅	E	Y	ε	υ
06			&	6	F	V	f	v			¦	'A	Z	Φ	ζ	φ
07			'	7	G	W	g	w			§	·	H	X	η	χ
08			(	8	H	X	h	x			¨	'E	Θ	Ψ	θ	ψ
09			)	9	I	Y	i	y			©	'H	I	Ω	ι	ω
10			*	:	J	Z	j	z				'I	K	Ϊ	κ	ϊ
11			+	;	K	[	k	{			«	»	Λ	Ÿ	λ	ü
12			‚	<	L	\	¦	|			¬	'O	M	á	μ	ό
13			‾	=	M	]	m	}			SHY	½	N	έ	ν	ύ
14			.	>	N	^	n	~				'Y	Ξ	ή	ξ	ώ
15			/	?	O	_	o				―	'Ω	O	í	ο	

11.1.5 Character set ISO 8859-9 (Roman alphabet no. 5)

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
00			SP	0	@	P	‘	p			NBSP	°	À	Ğ	à	ğ
01			!	1	A	Q	a	q			¡	±	Á	Ñ	á	ñ
02			"	2	B	R	b	r			¢	²	Â	Ò	â	ò
03			#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
04			$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
05			%	5	E	U	e	u			¥	µ	Å	Õ	å	õ
06			&	6	F	V	f	v			¦	¶	Æ	Ö	æ	ö
07			'	7	G	W	g	w			§	·	Ç	x	ç	÷
08			(	8	H	X	h	x			¨	¸	È	Ø	è	ø
09			)	9	I	Y	i	y			©	¹	É	Ù	é	ù
10			*	:	J	Z	j	z			a	o	Ê	Ú	ê	ú
11			+	;	K	[	k	{			«	»	Ë	Û	ë	û
12			‚	<	L	\	|	|		¬	¼	Ì	Ü	ì	ü
13			−	=	M	]	m	}			SHY	½	Í	İ	í	ı
14			·	>	N	^	n	~			®	¾	Î	Ş	î	ş
15			/	?	O	_	o				¯	¿	Ï	ß	ï	ÿ

11.2 Compose characters

This section shows all compose characters that are supported by MT9750, as well as the key sequences that are used to compose them.

The Compose function is only available when your session is in 8-bit mode. See the section on setting up the data display terminal in the „Configuration“ chapter for information on changing terminal modes.

To create a compose character:

- Press and release the COMPOSE key. If your keyboard does not have a COMPOSE key, use the AltGr key instead.
- Type a valid compose sequence from the table shown on the next page. The composed character is displayed.

If you type an invalid compose sequence, your terminal beeps, no character is displayed, and you must run through the process again.

If you activate the Compose function by mistake, press the Backspace key to cancel it and return to normal mode.

The following tables show the compose key sequences:

Á 'A	Ì I`	Ü U"	ê ^e	ù ù	¢ |C	§ !s	- --	µ /U
Á A'	Î `I	× **	ë e"	û u^	¢ c|	§ 0S	® OR	¶ !P
À A`	Î I^	× xx	ë "e	û ^u	¢ |c	§ 0s	® Or	¶ !p
À `A	Î ^I	Ý 'Y	í i'	ü u"	£ -L	§ S0	® RO	¶ P!
Â A^	Ï I"	Ý Y'	í 'i	ü "u	£ -l	§ s0	® rO	¶ p!
Â ^A	Ï "I	á a'	ì i`	ý y'	£ =L	§ S!	® oR	· .
Ã A~	Ñ N~	á 'a	ì `i	ý 'y	£ =l	§ s!	® or	· .
Ã ~A	Ñ ~N	à a`	î i^	ÿ y"	£ L-	§ SO	® Ro	¸ ,
Ä A"	Ó 'O	à `a	î ^i	ÿ "y	£ l-	§ so	® ro	¸ ,
Ä "A	Ó O'	â a^	ï i"	# ++	£ L=	§ os	¯ _	¹ 1^
Å A°	Ò O`	â ^a	ï "i	@ aa	£ l=	§ OS	¯ _	¹ ^1
Å °A	Ò `O	ã a~	ñ n~	@ AA	¤ 0X	¨ ''	¯ ___	º -O
Å Ao	Ô O^	ã ~a	ñ ~n	[((	¤ 0x	© 0C	¯ ^_	º -o
Å oA	Ô ^O	ä a"	ó o'	\ //	¤ X0	© 0c	¯ _^	º O-
Æ AE	Õ O~	ä "a	ó 'o	\ /<	¤ x0	© C0	° #	º o-
Ç ,C	Õ ~O	å ao	ò o`	\ </	¤ OX	© c0	° o	» >>
Ç C,	Ö O"	å oa	ò `o	]))	¤ XO	© CO	° #	¼ 14
Ð -D	Ö "O	å a°	ô o^	{ (-	¤ xo	© co	° o	½ 12
Ð D-	Ø O/	å °a	ô ^o	{ -(	¤ ox	© OC	° 0^	¾ 34
É 'E	Ø /O	æ ae	ö o"	| /^	¥ -Y	© oc	° ^0	¿ ??
É E'	Þ PT	ç ,c	ö "o	| ^/	¥ -y	ª -A	± +-	÷ /
É `E	Þ TP	ç c,	õ o~	})-	¥ =Y	ª -a	± -+	÷ :-
É E`	Ú U'	ð -d	õ ~o	} -)	¥ =y	ª A-	² 2^	þ pt
Ê E^	Ú 'U	ð d-	ø o/	¡ !!	¥ Y-	ª a-	² ^2	þ tp
Ê ^E	Ù U`	é e'	ø /o	¢ C/	¥ y-	« <<	³ 3^	
Ë "E	Ù `U	é 'e	ß ss	¢ c/	¥ Y=	¬ !-	³ ^3	
Ë E"	Û U^	è `e	ú u'	¢ /C	¥ y=	¬ -!	´ '	
Í I'	Û ^U	è e`	ú 'u	¢ /c	¦ |	- -	´ '	
Í 'I	Ü U"	ê e^	ù u`	¢ C|	§ !S	- -	µ /u	

Compose keys ISO 8859-1

Á 'A	Ë E:	Õ O"	× XX	đ d-	ň <n	ü u:	§ !s	° oo
Á A'	Ë :E	Ő O"	Ý 'Y	ď <d	ó o'	ü :u	§ 0S	¸ ;
Ă A(	Ě E<	Ŕ 'R	Ý Y'	ď d<	ó 'o	ů ou	§ 0s	¸ ;
Ă (A	Ě <E	Ŕ R'	Ź Z'	é e'	ô o	ů uo	§ S0	¸ ;;
Â A^	Ę ;E	Ř R<	ź 'Z	é 'e	ô ^o	ű u"	§ s0	' '
Â ^A	Ę E;	Ř <R	Ž Z<	ě <e	ő o"	ű "u	§ S!	' '
Ä A:	Í I'	Ś S'	ž <Z	ě e<	ő "o	ý y'	§ s!	' ''
Ä :A	Í 'I	ś 'S	Ż .Z	ë "e	ö o:	ý 'y	§ SO	˘ <
Ä A"	Î I^	Š <S	ż Z.	ë e"	ö :o	ź 'z	§ so	˘ <
Ä "A	Î ^I	Š S<	á a'	ë :e	ŕ r'	ź z'	§ os	˘ <<
Ą A;	Ĺ L'	Ş S,	á 'a	ë e:	ŕ 'r	ž <z	§ OS	˛ ´
Ą ;A	Ľ 'L	Ş ,S	â a^	ę e;	ř <r	ž z<	¨ :	˛ ´
Ć C'	Ł /L	Ť <T	â ^a	ę ;e	ř r<	ż .z	¨ :	˛ ´ ´
Ć 'C	Ł L/	Ť T<	ă (a	í i'	ś s'	ż z.	¨ ::	˜ "
Č C<	Ľ L<	Ţ T,	ă a(	í 'i	ś 's	˘ (	– –	˜ "
Č <C	Ľ <L	Ţ ,T	ä a"	î i^	š <s	˘ (	– –	˜ " "
Ç ,C	Ń N'	Ú U'	ä "a	î ^i	š s<	˘ ((	– --	÷ -:
Ç C,	Ń 'N	Ú 'U	ą ;a	Í l'	ş ,s	¤ 0X	° #	÷ :-
Ď D<	Ň <N	Ü :U	ą a;	Í 'l	ş s,	¤ 0x	° o	÷ /
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Đ -D	Ó 'O	Ů Uo	ć 'c	ł l/	ţ t,	¤ x0	° #	· .
Đ D-	Ó O'	Ů oU	č <c	Ľ <l	ţ ,t	¤ OX	° o	· .
É 'E	Ô O^	Ű U"	č c<	Ľ l<	ť t<	¤ XO	° 0	· ..
É E'	Ô ^O	Ű "U	ç ,c	ń n'	ť <t	¤ xo	° 0^	
Ë "E	Ö O:	× **	ç c,	ń 'n	ú u'	¤ ox	° ^0	
Ë E"	Ö :O	× xx	đ -d	ň n<	ú 'u	§ !S	° 00	

Compose keys ISO 8859-2

А AA	Ж ZH	Л LL	Ў (U	Ђ D-	ё e:	й jj	њ нь	Щ sh
Б BB	Ѕ DS	Љ BL	Ў U(	Ђ DJ	є je	j j	о oo	Щ sc
В WW	Ѕ CC	Љ LB	Ў (У	Ђ D|	є ээ	j йй	п pp	ъ ''
Г GG	З ZZ	Љ LJ	Ў У(	Ђ ДЪ	ж zh	к kk	р rr	ы уу
Ѓ G'	И II	Љ L|	Ф FF	Ђ ДЬ	з zz	ќ 'k	с ss	ь '
Ѓ '	І I	Љ ЛБ	Х HH	Э EA	s ds	ќ k'	т tt	э ea
Ѓ 'Г	І ИИ	Љ БЛ	Ц CC	Ю JU	s cc	ќ 'к	ћ tj	ћ -d
Ѓ Г'	Ї "I	М ММ	Ч CH	Я JA	и ii	ќ к'	ћ t'	ћ d'
Д DD	Ї I"	Н NN	Ц ,Ц	а aa	і і	л ll	ћ ть	ћ d-
Е EE	Ї I:	Њ NJ	Ц Ц,	б bb	і ии	љ l'	у uu	ћ dj
Ё "E	Ї :I	Њ N|	Ц DZ	в ww	ї :i	љ lj	ў (u	ћ дь
Ё E"	Ї "И	Њ Нъ	Щ SH	г gg	ї і:	љ ль	ў u(	Ю ju
Ё :E	Ї И"	Њ Нь	Щ SC	д dd	ї :и	м mm	ў (у	я ja
Ё :E	Ї :И	О OO	Ћ TJ	ѓ 'g	ї и:	№ NO	ў у(	- --
Ё E:	Ї И:	П PP	Ћ T|	ѓ 'r	ї "i	№ No	ф ff	§ &&
Ё E:	Й JJ	Р RR	Ћ ТЪ	ѓ g'	ї і"	№ НО	х hh	§ os
Ё "E	Ј ЙЙ	С SS	Ћ ТЬ	ѓ r'	ї "и	№ Но	ц cc	§ so
Ё E"	Ј J	Т TT	Ъ ||	е ee	ї и"	н nn	ч ch	
Є JE	К КК	У UU	Ы YY	ё "e		њ nj	Џ dz	
Є TE	Ќ 'К		Ь |	ё e"		њ n'	Џ ,ц	
Є ЭЭ	Ќ К'		Ћ -D	ё :e			Џ ц,	

Compose keys ISO 8859-5

A A	Ï I"	T T	γ g	λ l	ὐ y'	¦ |	© oc	³ 3	
A AA	Ï "I	T TT	γ gg	λ ll	ὐ 'y	¦ ||	« <	³ 33	
Ά A'	Ί 'I	Υ Y	δ d	μ m	ϋ y"	§ !S	« <<	´ '	
Ά 'A	Ί I'	Υ YY	δ dd	μ mm	ϋ "y	§ !s	¬ !-	´ ''	
B B	K K	Ÿ Y"	ε e	ν n	ΰ'"y	§ 0S	¬ -!	΅ '"	
B BB	K KK	Ÿ "Y	ε ee	ν nn	ΰ"'y	§ 0s	- -	΅ "'	
Γ G	Λ L	Υ Y'	έ 'e	ξ j	φ f	§ S0	- --	΅ ':	
Γ GG	Λ LL	Υ 'Y	έ e'	ξ jj	φ ff	§ s0	— =	΅ :'	
Δ D	M M	Φ F	ζ z	ο o	χ x	§ S!	— ==	· ..	
Δ DD	M MM	Φ FF	ζ zz	ο oo	χ xx	§ s!	° 00	· .	
E E	N N	X X	η h	ό 'o	ψ c	§ SO	° #	» >	
E EE	N NN	X XX	η hh	ό o'	ψ cc	§ so	° o	» >>	
Έ E'	Ξ J	Ψ C	ή 'h	π p	ω v	§ os	° #	½ 12	
Έ 'E	Ξ JJ	Ψ CC	ή h'	π pp	ω vv	§ OS	° o		
Z Z	O O	Ω V	θ u	ρ r	ὠ v'	§ @@	° 0^		
Z ZZ	O OO	Ω VV	θ uu	ρ rr	ὠ 'v	¨ :	° ^0		
H H	Ό O'	Ώ V'	ι ii	σ s	' (	¨ ::	± +-		
H HH	Ό 'O	Ώ 'V	ι i	σ ss	' ((	© 0C	± -+		
Ή H'	Π P	α a	ϊ "i	ς w	`)	© 0c	² 2		
Ή 'H	Π PP	α aa	ϊ i"	ς ww	`))	© C0	² 22		
Θ U	P R	ά a'	ί i'	τ t	£ -l	© c0	² 2^		
Θ UU	P RR	ά 'a	ί 'i	τ tt	£ L-	© CO	² ^2		
I I	Σ S	β b	κ k	υ y	£ l-	© co	³ 3^		
I II	Σ SS	β bb	κ kk	υ yy	£ -L	© OC	³ ^3		

Compose keys ISO 8859-7

Á 'A	Ì I`	Û U^	ê e^	ø o/	£ L=	§ s!	® oR	¶ !P
Á A'	Ì `I	Û ^U	ê ^e	ø /o	£ l=	§ SO	® or	¶ !p
À A`	Î I^	Ü U"	ë e"	ş s,	£ -L	§ so	® Ro	¶ P!
À `A	Î ^I	Ü U"	ë "e	ş ,s	£ -l	§ os	® ro	¶ p!
Â A^	İ .I	× **	ğ (g	ß ss	¤ 0X	§ OS	¯	· .
Â ^A	İ I.	× xx	ğ g(	ú u'	¤ 0x	¨ "	¯ _	· .
Ã A~	Ï I"	á a'	ı i-	ú 'u	¤ X0	© 0C	¯ ___	¸ ,
Ã ~A	Ï "I	á 'a	ı -i	ù u`	¤ x0	© 0c	¯ ^_	¸ ,
Ä A"	Ñ N~	à a`	í i'	ù 'u	¤ OX	© C0	¯ _^	¹ l^
Ä "A	Ñ ~N	à `a	í 'i	û u^	¤ XO	© c0	° #	¹ ^l
Å A°	Ó 'O	â a^	ì i`	û ^u	¤ xo	© CO	° o	º -O
Å °A	Ó O'	â ^a	ì `i	ü u"	¤ ox	© co	° #	º -o
Å Ao	Ò O`	ã a~	î i^	ü "u	¥ -Y	© OC	° o	º O-
Å oA	Ò `O	ã ~a	î ^i	ÿ y"	¥ -y	© oc	° 0^	º o-
Æ AE	Ô O^	ä a"	ï i"	ÿ "y	¥ =Y	ª -A	° ^0	» >>
Ç ,C	Ô ^O	ä "a	ï "i	¡ !!	¥ =y	ª -a	± +-	¼ 14
Ç C,	Õ O~	å ao	ñ n~	¢ C/	¥ Y-	ª A-	± -+	½ 12
Ğ (G	Õ ~O	å oa	ñ ~n	¢ c/	¥ y-	ª a-	² 2^	¾ 34
Ğ G(	Ö O"	å a°	ó o'	¢ /C	¥ Y=	« <<	² ^2	¿ ??
É 'E	Ö "O	å °a	ó 'o	¢ /c	¥ y=	¬ !-	³ 3^	÷ /
É E'	Ø O/	æ ae	ò o`	¢ C|	¦ |	¬ -!	³ ^3	÷ :-
È E'	Ø /O	ç ,c	ò `o	¢ |C	§ !S	- -	' '	þ pt
È 'E	Ş S,	ç c,	ô o^	¢ c|	§ !s	- -	' '	þ tp
Ê E^	Ş ,S	é e'	õ ^o	¢ |c	§ 0S	- --	µ /u	
Ê ^E	Ú U'	é 'e	ö o"	£ =L	§ 0s	® OR	µ /U	
Ë "E	Ú 'U	è `e	ö "o	£ =l	§ S0	® Or		
Ë E"	Ù U`	è e`	ō o~	£ L-	§ s0	® RO		
Í I'	Ù `U		ō ~o	£ l-	§ S!	® rO		
Í 'I								

Compose keys ISO 8859-9

11.3 Printer control characters supported

This section lists the control characters in the host data stream which are interpreted in the course of bypass printing. Some of these control character functions are ignored and some are emulated in full or in part.

If a control sequence is ignored, the characters are removed from the data stream. A warning is displayed that the printout may contain errors. This warning can be suppressed, but printing is continued.

If a control character function is only emulated in part, messages are output indicating the type of restriction and its effects.

Control sequences that are not listed below can lead to various error situations. They can either cause an error message to be output and printing to be canceled, or they are passed on to the printer where undefined situations may occur.

Several control sequences are possible for each control character function. The control sequences are unique.

Control character function	Control sequence (ISO 7-bit)	Emu-lated	Remarks
Set form length	1B 5B p_1 70	x	The control sequence with P_1=0 is ignored, i.e. a warning is output. This function should disable the FF function.
Reset form length	1B 5B 70	x	
Set first and last print line	1B 5B p_1 3Bp_2 7B	x	
Reset first and last print line	1B 5B 7B	x	
Set begin and end of line	1B 5B p_1 3Bp_2 73	–	
Reset begin and end of line	1B 5B 73	–	
Form feed	OC	x	
Set line spacing	1B 5B p_1 78	x	
Reset line spacing	1B 5B 78	x	
Line feed	OA	x	
Half-line feed forward	1B 4B	–	
Half-line feed reverse	1B 4C	–	
Set vertical tab stops	1B5B$p_1$3B..3Bp_{16}72	–	
Reset vertical tab stops	1B 5B 34 67	–	
Reset vertical tab stops of a channel	1B 5B 72	–	
Vertical tabulation	OB	–	
Select VT channel	1B 5B p_1 20 75	–	
Relative vertical tabulation in lines	1B 36 n_1	–	
Relative vertical tabulation in microlines	1B 5B p_1 21 78	–	

Control character function	Control sequence (ISO 7-bit)	Emu-lated	Remarks
Carriage return	OD	x	When using Windows printers, CR is always interpreted as a combination of CR and LF. Any subsequent LF is ignored.
Space	20	x	
Backspace	08	x	When using Windows printers, the Print Manager replaces the character output before BS with the following character instead of printing the two characters on top of each other.
Character pitch	1B 5B p_1 77	x	Emulated: p_1=31: 10 cpi p_1=32: 12 cpi p_1=33: 15 cpi p_1=34: 17.1 cpi p_1=35: 13.3 cpi
	14 37	x	10cpi (BAM)
	14 38	x	12 cpi (BAM)

Control character function	Control sequence (ISO 7-bit)	Emu-lated	Remarks
Set spaced mode	1B 5B p_1 20 45	–	
Reset spaced printing	1B 5B 20 45	–	
Set proportional mode	1B 5B 3C 77	x	
Reset proportional mode	1B 5B 3D 77	x	
Bidirectional mode	1B 20 3A	–	
Unidirectional mode	1B 20 3D	–	
Justify left and right	1B 20 38	–	
Reset justification	1B 20 39	–	
Relative horizontal tabulation	1B 5B p_1 61 1B 38 n_1	x –	
Absolute horizontal tabulation by character pitch	1B 5B p_1 60	–	
Absolute horizontal tabulation by microcolumns	1B 5B p_1 20 72	–	
Set horizontal tab stops	1B5B$p_1$3B..3Bp_{32}71	x	Fixed HT stops are set automatically at every 8th position (column 1, 9,17, etc.)
Reset horizontal tab stops	1B 5B 33 67 1B 5B 71	x x	
Horizontal tabulation	09	x	
Set expanded mode	1B 2A 38 1B 38	x x	
Reset expanded mode	1B 3C	x	
Set NLQ mode	1B 21 3A	x	
Set draft mode	1B 21 39	x	
Set superscript mode	1B 21 37	x	
Set subscript mode	1B 21 38	x	
Reset superscript or subscript mode	1B 21 36	x	

Control character function	Control sequence (ISO 7-bit)	Emu-lated	Remarks
	14 39	x	15 cpi(BAM)
Set italics mode	1B 2A 33	x	
	1B 33	x	
Reset italics mode	1B 2A 34	x	
	1B 34	x	
Set underline mode	1B 30	x	
Reset underline mode	1B 39	x	
	1B 2A 39	x	
Set boldface mode	1B 21 31	x	
Reset boldface mode	1B 21 30	x	
Set double point	1B 21 33	–	
Reset double point	1B 21 32	–	
Set tall mode	1B 21 35	–	
Reset tall mode	1B 21 34	–	
Smudge	7F	x	
Select national character set	1B 28 p_1	x	Emulated: p_1=40:Interna-tional p_1=41:English p_1=42:ASCII p_1=45:Danish, Norwegian p_1=48:Swedish 2 p_1=4B:German p_1=52:French p_1=59:Italian p_1=33:Spanish p_1=35:Swiss p_1=36:Norwe-gian 2 p_1=37:Danish 2 p_1=38:French, Belgian 2

Control character function	Control sequence (ISO 7-bit)	Emu-lated	Remarks
Print characters at code x'00' to x'1F' and x'80' to x'9F'	1B 3A	–	
Activate character set 1 (SI)	0F	x	
Activate character control set 2 (SO)	0E	x	
Activate loadable character generator	1B 35	–	
Activate loadable character generator (96 characters)	1B 5B 74	–	
Load base character generator into LCG	1B 5B 20 74	–	
Load single character into LCG (8-bit mode)	1B 5B p_1 74	–	
Load single character into LCG (6-bit mode)	1B 5B p_1 70	–	
Set bit image graphics, 8-bit, single density	1B 5B p_1 79	–	
Set bit image graphics, 8-bit, double density	1B 5B p_1 7A	–	
Set bit image graphics, 8-bit, quadruple density	1B 5B p_1 21 7A	–	
Set bit image graphics, 6-bit, single density	1B 5B p_1 22 79	–	
Set bit image graphics, 6-bit, double density	1B 5B p_1 22 7A	–	
Set bit image graphics 6-bit, quadruple density	1B 5B p_1 22 7B	–	
Set scanner graphics	1B 5B 7C	–	
Reset scanner graphics	1B 5B 7E	–	
Audible signal (BEL)	07	–	
Define begin of text	1B 5B p_1 20 79	–	
Define end of text	1B 5B 20 79		

Control character function	Control sequence (ISO 7-bit)	Emu-lated	Remarks
Control character for initial condition	1B 52	x	Is handled like printer initialization
Request device ID	1B 5B 63	–	
Load sequence number	1B 50 3B $s_2$1B 5C	–	
Request status message	1B 5B 35 6E	–	
Initialize printer	1B 63	x	
line density 6 lpi	14 31	–	
line density 8 lpi	14 32	–	
Absolute vertical tabulation	1B 5B p_1 64	–	
Relative vertical tabulation	1B 5B p_1 65	–	
Select character component	1B 2C p_1	–	
Set overrule mode	1B 20 32	–	
Reset overrule mode	1B 20 33	–	
Select dot group	1B 5B p_1 20 77	–	
Set graphics mode with repeat factor	1B 5B p_1 3B p_2 76	–	
Load text and graphics memory	1B 20 34	–	
Terminal text and graphics memory loading	1B 20 35	–	
Read text and graphics memory content	1B 20 36	–	
Automatic sheet feeding from front cartridge	1B 5B 31 20 70	–	
Automatic sheet feeding from rear cartridge	1B 5B 32 20 70	–	

12 Appendix

12.1 DDE data exchange

DDE (Dynamic Data Exchange) is a mechanism for establishing and administering links between various Windows applications. The linked applications can then exchange and update their data automatically.

In this process, there is a distinction to be made between the DDE client and the DDE server. The DDE client signifies the part of the target application that receives the data from the DDE server. Conversely, the DDE server makes the data from the source application available in line with the defined items.

MT9750 makes the DDE server function available. This means that data that is supplied by a host application being used can be inserted and edited in another Windows application. In this way, for example, the results of a database query can be linked to Excel, edited further, and converted to graphic format.

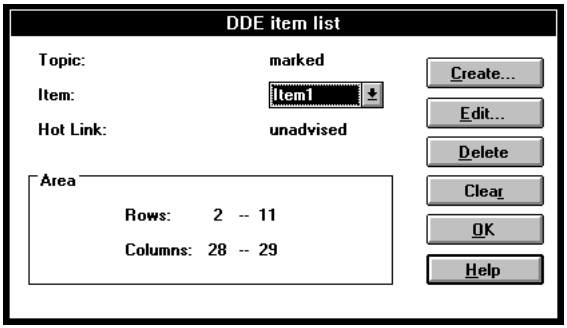
The following steps are required to exchange data using DDE:

1. Definition of a DDE connection
2. Establishment of a DDE link in the target application
3. If automatic updating (hot link) was not configured, renewed data exchange must be initiated by the user.

12.1.1 Defining a DDE connection

You need to establish a DDE connection in order to transfer data automatically from the emulation to another Windows application. To do this, proceed as follows:

- Select the *DDE Configuration...* menu item in the *Edit* menu
  In the dialog box displayed, you have the option of viewing the characteristics of the DDE connection that was already configured. The following information is displayed:



Topic	This is fixed and reads *marked*.
Item	The item description is specified by the user.
Hot Link	This indicates whether the data should be updated automatically by the client.
Area	This displays the row and column area in the 9750 application window that belongs to the item. The data from this area is transferred to the application.

- Select *Create* to configure a new DDE connection.
  A new item is defined in the dialog box that appears. Specify the name of the DDE connection to be used by the client.
- Confirm your entries with OK.

Editing/deleting DDE connections that were already configured

You can change DDE connections that were already configured (e.g. redefine the area to be transferred) or delete them. The *Edit...*, *Delete*, and *Reset* command buttons are available for this purpose in the *Edit: DDE Configuration...* dialog box.

12.1.2 Establishing DDE connections to other Windows applications

In order to establish the DDE connection to the target application, you will need to take preparatory steps in the relevant application. The steps you need to take in the individual situations depend on the target application and are described there.

The following section contains an example of how to link to a document that was created using the Windows application MS Word.

- First open the Word document in which you want to paste the data and position the cursor where the text is to be pasted.
- Select *Field...* in the *Paste* menu*:*
  In the dialog box that appears, select the *Connection* entry from the list of field types to be entered.
- Delete the *Connection* entry in the *Field Function* text box. The parameters that should be entered instead are as follows:

  Type: Specify `DDEAUTO` here, if you want automatic updates, or `DDE` if updates are to be carried out manually.

  Filename: Specify the filename of the connection to the MT9750 emulation here.

  Position reference:`marked`

  Format: Specify the item defined in the emulation from which the data should be transferred here.
- Confirm your data with *OK*.

In the case of an automatic connection (type=DDEAUTO), the emulation passes on the data that has changed to the application. DDE connections are saved with the relevant session.

If you want the DDE connection to be updated manually, you have to pass on data that has changed yourself.

If you want to establish a connection to an MS Excel document, select the target area required and enter the following array formula:

```
=MT9750|marked!<item>
```

(Array formulas are entered by pressing Shift+Ctrl+Enter).

12.2 Generating UTM applications

The following sections contain examples for the generation of a UTM application using MT9750.

1. Defining a UTM dialog terminal with a unique terminal name:

LTERM and PTERM KDCDEF instructions:

```
PTERM <terminal>,LTERM=<logterm>,PRONAM=<PC name> ,PTYPE=T9750
LTERM <logterm>
```

<terminal>=terminal name (in the LAN=PPort of the local name)
<logterm>= logical name of the terminal in the UTM
<PC name>=name of the PC in the BS2000

2. Defining a UTM dialog terminal for a number of connections of a PC:

TPOOL KDCDEF instruction:

```
TPOOL PRONAM=<PC name> ,
      LTERM=<logprefix>, NUMBER=<number>,PTYPE=T9750
```

<logprefix>=start of the logical terminal name
<number>=number of terminals
<PC name>=name of the PC in the BS2000

A logical terminal name is formed from <logprefix><number>.

3. Defining a bypass printer for a unique terminal:

```
PTERM <RSO printer>,CID=D3,CNTRLU=T9750,LTERM=<logprint>,
      PRONAM=<PC name>,PTYPE=T9022,USAGE=O
LTERM <logprint>,CTERM=<logterm>,PLEV=1,QLEV=1000,USAGE=O
```

<RSO printer>= RSO name of the printer,
<logterm>=logical name of the dialog terminal connected to the printer
<logprint>=logical name by which the printer is accessed from UTM
<PC name>=name of the computer in the BS2000

Glossary

9632
See *LAN channel adapter*.

9750, 9755, 9756, 9758, 9762, 9763
See *data display terminal*.

ANSI

The 8-bit character set of the American National Standards Institute. MS Windows uses the ANSI character set. The first 128 characters are the same as in the *ASCII* character set.

ASCII

An acronym for American Standard Code for Information Interchange. ASCII defines a standard set of codes for text characters. You can normally call and process files containing ASCII characters in word processing programs. You can also call the contents of an ASCII file using the MS-DOS command *TYPE* or the SINIX command *cat*.

BS2000

The operating system for SNI host computers is called BS2000.

BS2000 procedure

BS2000 command sequences which are stored in files are referred to as procedures.

communication computer (CC)

A computer in a data network that mainly provides communication services, i.e. services in accordance with ISO layers 1 to 4 or the NEA protocols NEAN and NEATE. Among other things, a communication computer ensures that data is distributed correctly and transferred reliably. A communication computer runs under the PDN operating system. The configuration parameters of a data network are described in the shape of KOGS macros. Communication computers can be front-end processors (FEP), remote front-end processors (FEPR), or terminal computers (TC).

data display terminal

A data display terminal consists of a visual display unit, system unit, and a keyboard. You can work with a *BS2000* computer from a *9750* data display terminal.

display attribute

Display attributes define how data is displayed. An attribute can relate to a certain color (on a color screen) and can also create effects such as reverse video, blinking, high intensity, underline, and the like.

Ethernet

A standard system for linking computers. It is used in local area networks (LANs) based on the CSMA/CD network protocol (carrier sense multiple access with collision detection). The Ethernet software that you need to use with MT9750 is LAN1 V2.0.

Ethernet address

An Ethernet address is used to uniquely identify an Ethernet board. The 6-byte address is allocated by the manufacturer of the board and is unique throughout the world.

host

The computer to which a *data display terminal* (or a *terminal) i*s connected. Programs are executed, files stored, and *data display terminal* input/output controlled on the host. The host to which a *9750 data display terminal* is connected is a *BS2000* host (synonym: mainframe).

Internet address

The Internet address is the unique address of a computer in a network. It consists of the network address and a computer number. A computer name is allocated to the Internet address. A computer can be accessed via its Internet address or via the computer name.

Internet Protocol (IP)

IP is a protocol that selects the path in a computer network. The protocol uses Internet addresses in destination and source specifications. These addresses contain information about which addresses and which computer need to be accessed.

LAN (local area network)

A network in which all *terminals* and other devices are a short distance away from each other and can be linked by cable.

LAN channel adapter (9632)

The 9632 LAN channel adapter is used to connect a *BS2000* host to a *LAN* on the basis of an *Ethernet* protocol.

multiple sessions

You can establish up to 16 concurrent sessions under MT9750. These are referred to as multiple sessions.

online Help

If you have any questions (e.g. on handling) when working with the MT9750 emulator, you can call up information on the problem from the *Help* menu item or in a dialog box via the *Help* command button.

protocol

Rules for the exchange of data between two computers, defining the type of electrical connection, the data format, and the sequence of data.

session

A window on the screen in which the BS2000 prompt appears. A session is stored with the filename extension *.MTS*.

session recording

An MT9750 function which enables you to store your *session* with the *host* in a text file. In this way, you can record data that the *BS2000 host* has sent to your PC or create batch program files.

TCP

TCP stands for Transport Control Protocol. TCP is a protocol which handles the movement of data between two computers. TCP operates with port addresses and allows multiplexing of the computer-to-computer addressing supported by the lower layers. The protocol incorporates mechanisms to safeguard data transmission.

user ID

The user ID is a string that is used to identify the user to the operating system.

wildcard

A character that can stand for any character or any group of characters. Wildcards are used in copying, deleting, and in other functions.

Abbreviations

A

ANSI	American National Standards Institute
API	Application Programming Interface
ASCII	American Standard Code for Information Interchange

B

BCAM	Basic Communication Access Method
BS	Backspace
BS2000	Operating System 2000

C

CECP	Country extended code page
Com	Communication port
CC	Communication computer
CR	Card reader
CR	Carriage Return
CSMA/CD	Carrier sense multiple access with collision detection

D

DCAM	Data Communication Access Method
DDE	Dynamic Data Exchange
DOS	Disk Operating System
DDT	Data display terminal
DT	Data transmission

E

EBCDIC	Extended Binary Coded Decimal Interchange Code
EHCS	Extended host code support
EHLLAPI	Emulator High Level Language Application Programming Interface

F

FEP	Front-end processor
FF	Form feed
FTP	File Transfer Protocol

G

GDI	Graphic design interface
GSM	Global System for Mobile communications (EG standard Groupe Special Mobile

H

HT	Horizontal tabulation
HTML	Hypertext Markup Language

I

INCA	Intelligent network and communications adaptor
ISDN	Integrated Services Digital Network
ISO	International Organisation for Standardization
IVR	Integrated host (from the German name)

L

LAN	Local area network
LDUES	Loadable communication controller (from the German name)
LF	Line feed
LLS	Loadable controller (from the German name)
LPT	Line printer

M

MDC	MODACOM
MODACOM	Mobile Data Communication
MS	Microsoft

N

NT	New Technology

O

OEM	Original equipment manufacturer

OLE	Object linking and embedding
openFT	Open filetransfer
P	
PC	Personal computer
PDN	Program System for Data Communication and Network Control
PLUS	Loading and saving program keys
R	
RCC	Remote cluster controller
RECV	Communication
RFC1006	Request for Comment 1006
RSO	Remote SPOOL Output
S	
SMCS	Siemens Mobile Communication Services
T	
TC	Terminal computer
TCP/IP	Transmission Control Protocol/Internet Protocol
TELNET	Teletype network
TNS	Transport Name Service
U	
UTM	Universal transaction monitor
V	
VFT	Virtual Filetransfer
VGA	Video Graphics Adapter
VT	Vertical tabulation
W	
WAN	Wide Area Network
WWW	World Wide Web
X	
XHCS	Extended host code support
XREQ	Send command

Related publications

Related publications from Siemens Nixdorf Informationssysteme AG

You can find more information in the following SNI manuals if necessary:

– PCD Operating Manuals
– BS2000 System Administration documentation.
– User Guides for the SNI range of BS2000 computers
– User Guides for host applications

The following manuals provide information on the terminals that are emulated and may need to be consulted for purposes of comparison:

TRANSDATA
Datensichtstation 9763
9763 Data Display Terminal
Installationsanleitung
Installation Instructions

TRANSDATA
Datensichtstation 9763
9763 Data Display Terminal
Betriebsanleitung
Operating Manual

TRANSDATA
9758-M2/-M3/-M4/-EURO
Datensichtstation
Data Display Terminal
Betriebsanleitung
Operating Manual

TRANSDATA
Datensichtstationen
Funktionelle Beschreibung
Benutzerhandbuch

TRANSDATA
Data Display Terminals
Functional Description
User Guide

TRANSDATA
Datensichtstationen
Code-Tabellen
Benutzerhandbuch

TRANSDATA
Data Display Terminals
Code Tables
User Guide

TRANSDATA
PDN
PDN-GA V11.0A
Netzzugang für Datensichtstationen
Benutzerhandbuch

TRANSDATA
PDN-GA V11.0A
Network Access for Terminals
User Guide

The following manual provides important information on generating your data display terminal in PDN:

TRANSDATA
BS2000
PDN
PDN-GA V11.0A
DCAM V11.0A
Generierung eines Datenkommunikationssystems
Benutzerhandbuch

TRANSDATA
BS2000
PDN
PDN-GA V11.0A
DCAM V11.0A
Generating a Data Communication System
User Guide

If you need information on RSO, the BS2000 SPOOL program, you can look it up in the following manual:

BS2000
RSO V2.0
Remote SPOOL Output
Benutzerhandbuch
User Guide

Ordering manuals

The manuals listed above and the corresponding order numbers can be found in the Siemens Nixdorf *List of Publications.* New publications are described in the *Druckschriften-Neuerscheinungen (New Publications)*.

You can arrange to have both of these sent to you regularly by having your name placed on the appropriate mailing list. Please apply to your local office, where you can also order the manuals.

Other documentation

Microsoft Windows
User's Guide

Microsoft Windows
Getting Started with Microsoft Windows

Index

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Comments
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Submitted by

Comments on MT9750 V5.0
9750 Emulation under Windows (Windows 95, Windows NT)

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